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ABSTRACT

Forty-one readings are presented on the social ecology variables and interventions that characterize the life of persons with disabilities. The readings are grouped into six categories dealing respectively with background, assessment of student-centered variables, interventions relating to student-centered variables, program-centered variables, system-centered variables, and research methodology. Selected papers include: "An Ecosocial View of School and Work: Social Skills, Social Support, and Quality of Life" (Robert Gaylord-Ross and others); "Functional Assessment: Dynamic and Domain Properties" (Gaylord-Ross and Diane Browder); "Contextually Based Social Skill Training for Learning Disabled Youth" (Gaylord-Ross and others); "Vocational and Transition Issues for Seriously Emotionally Disturbed Adolescents and Young Adults" (Michael Bullis and Gaylord-Ross); "Social Skills Training with Handicapped Adults: A Reformulation of a Construct" (Tom Gumpel); "The Community Vocational Training Program: A Transition Program for Youths with Mild Handicaps" (Shepherd Siegel and others); "Research Breakthrough Reduces Turnover among Entry-Level Employees" (Siegel and John Sullivan); "The Supported Employment Consortium: An Analysis of an Interagency Advisory Group" (Renee Cameto); and "Visual Inspection and Statistical Analysis in Single Case Designs" (Hyun-Sook Park and others). A 20-item bibliography is included in addition to the references accompanying each reading. (JDD)

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READINGS IN ECOSOCIAL DEVELOPMENT

Edited By:

Robert Gaylord-Ross, Shepherd Siegel, Hyun-Sook Park,
Sharon Sacks, and Lori Goetz

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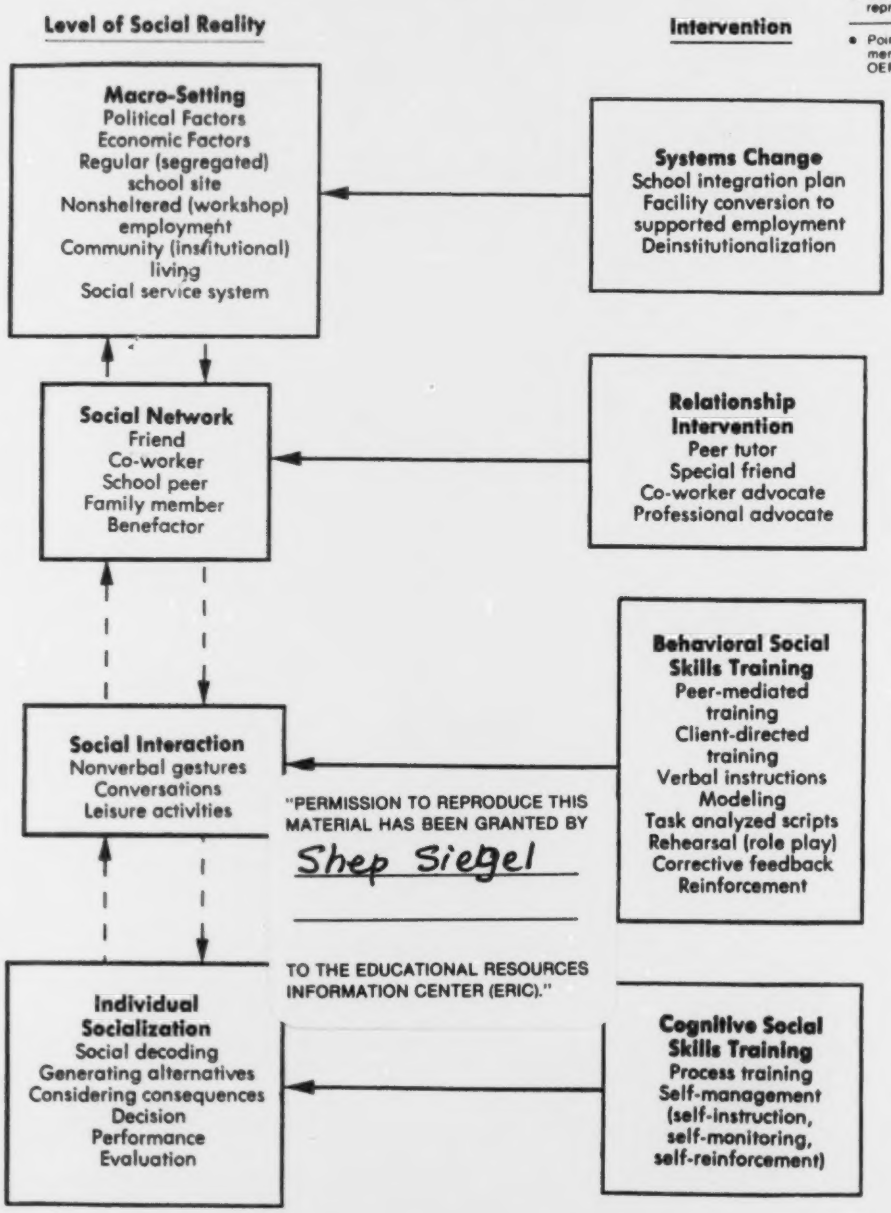

Level of Social Reality
Intervention
Macro-Setting
Political Factors
Economic Factors
Regular (segregated) school site
Nonsheltered (workshop) employment
Community (institutional) living
Social service system
Systems Change
School integration plan
Facility conversion to supported employment
Deinstitutionalization
Social Network
Friend
Co-worker
School peer
Family member
Benefactor
Relationship Intervention
Peer tutor
Special friend
Co-worker advocate
Professional advocate
Social Interaction
Nonverbal gestures
Conversations
Leisure activities
Behavioral Social Skills Training
Peer-mediated training
Client-directed training
Verbal instructions
Modeling
Task analyzed scripts
Rehearsal (role play)
Corrective feedback
Reinforcement
Individual Socialization
Social decoding
Generating alternatives
Considering consequences
Decision
Performance
Evaluation
Cognitive Social Skills Training
Process training
Self-management (self-instruction, self-monitoring, self-reinforcement)

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San Francisco State University

April 1990

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Hyun-Sook Park, Leonard Marascuilo, and Robert Gaylord-Ross

Introduction

The ecology of persons with disabilities has received increasing attention in research, demonstration, and advocacy efforts. Historically, characterizations of disabled persons focused on the individual, skill deficits, and pathologies. Advances in intervention and placement in multiple natural settings, though, have led to a 'new look' in this field. Achievements in communication and vocation, for instance, have highlighted the capacities of individuals with disabilities. Success in regular schools and classes, as well as nonsheltered workplaces, has led to novel portrayal of the disabled person engaging in a multiplicity of environments. Earlier work in ecobehavioral analysis (e.g., Rogers-Warren & Warren, 1978) has been advanced to a more precise specification of assessment and intervention variables (Chadsey-Rusch & Rusch, 1988).

The current volume has advanced the term ecosocial. Ecobehavioral may indeed be a broader term, but ecosocial more precisely designates the social ecology variables and interventions which characterize the life of persons with disabilities. Figure 1 depicts the different levels of social reality. These levels include macro-setting variables, social network variables, social interaction variables, and intra-individual variables. The right column of the figure delineates interventions which correspond to the different levels of ecosocial reality and have had some proven degree of efficacy. Such levels of intervention include: 'setting' integration programs, relationship interventions, behavioral social skills training, and cognitive-behavioral interventions. The current volume describes an array of ecosocial variables and interventions.

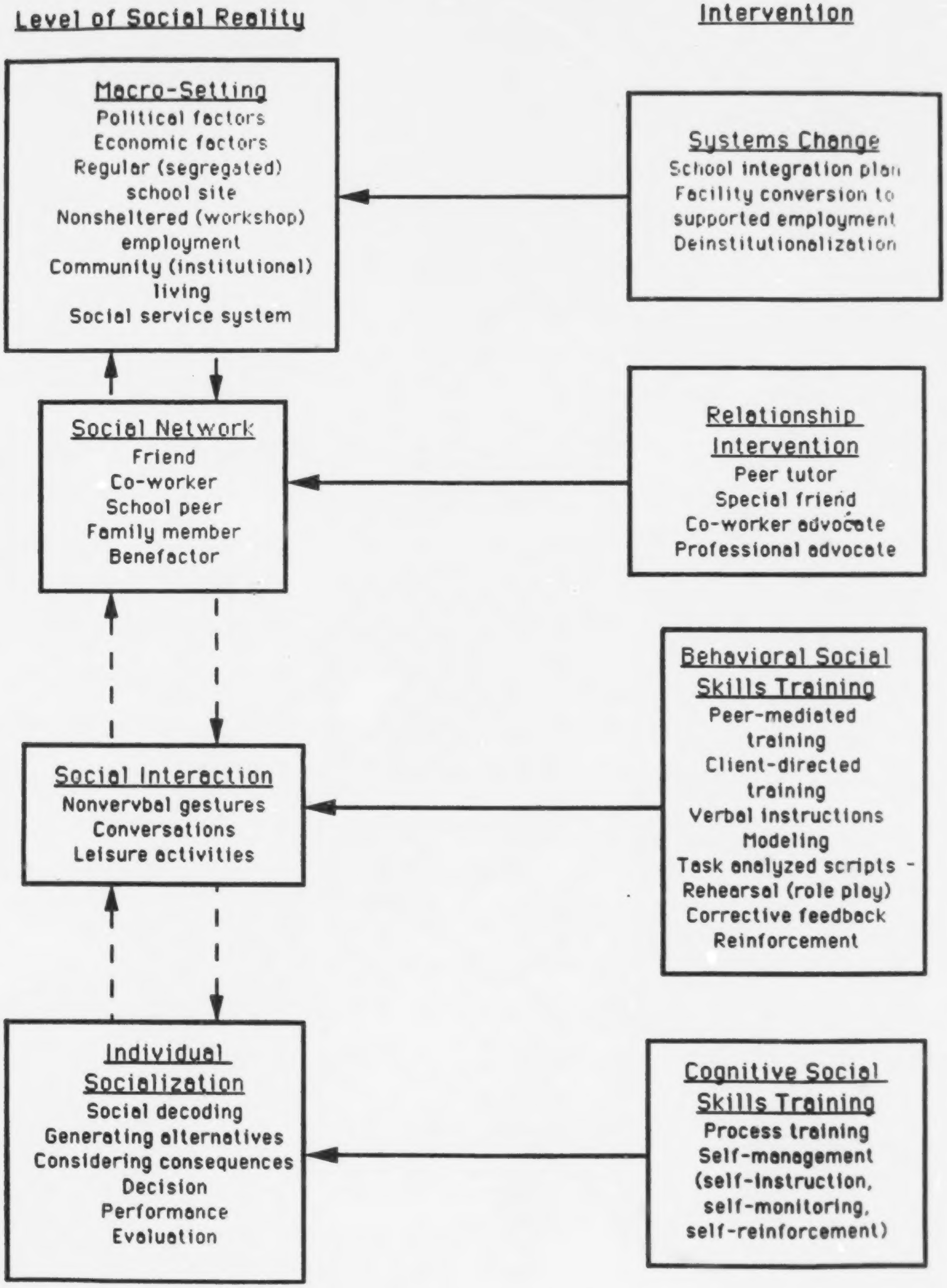
Readings in Ecosocial Development has been organized into six sections. A number of articles and chapters appear in each section. The first, Background section discusses broader, conceptual variables which impinge on ecosocial development. Such variables include the differentiation of environments, coping assistance strategies, and economic factors. The second section, Student-Centered Variables: Assessment, examines important markers of student performance. Such marker variables include: dynamic assessment, situational assessment, transitional development, qualitative analysis, new diagnostic categories, and the normative assessment of extant interventions. The third section is Student-Centered Variables. A number of programs for learning disabled, mentally retarded, and sensory impaired youth are described and evaluated. The reader is left with a sanguine view of integration when reviewing the outcome data of these programs. A Systems-Centered Variables section attempts to identify the critical macro variables which affect ecosocial R & D efforts. Systems change is examined with respect to issues dealing with cross-cultural education, longitudinal investigations, a state-wide consortium, and policy developments. A final section examines research methodology issues related to ecosocial studies. Particular attention is given to ecological validity. If an applied and pure research field is to advance, investigations must be conducted in natural settings. Methods of evaluating ecologically valid research are presented and evaluated.

The numerous pieces published in this monograph have emanated from the Vocational Special Education Program at San Francisco State University. We duly appreciate the efforts of our support staff: Yana Chandler, Regina Compton, Bob Lie, Pat Paul, Swift Pense, and Marilyn Samuels. We have also received invaluable consultation from the following distinguished scholars: Janis Chadsey-Rusch, Gary Clark, Eileen Gambrill, Steve Hinshaw, Steve Manweiler, Cap Peck, Chuck Salzberg, Mel

Semmel, Joanne Sowers, Lonnie Snowden, Hill Walker, Mark Wilson, and Naomi Zigmond. We also appreciate the generous funding received from the following agencies: Office of Special Education Programs, U.S. Department of Education (USDE), National Institute on Disability and Rehabilitation Research (USDE), March of Dimes, and the San Francisco Department of Rehabilitation. We would like to thank our most supportive project officers during the completion of these projects: Charley Freeman, Bill Halloran, Naomi Karp, Jim Kay, and Ed Wilson. An accompanying section delineates the completed books and monographs from the Vocational Special Education Program, as well as endeavors currently in progress. We do hope that our efforts have enhanced the understanding and lives of persons with disabilities.

San Francisco
March, 1990

The Ecosocial System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School peer
Family member
Benefactor
Relationship Intervention
Peer tutor
Special friend
Co-worker advocate
Professional advocate
Social Interaction
Nonvervbal gestures
Conversations
Leisure activities
Behavioral Social Skills Training
Peer-mediated training
Client-directed training
Verbal instructions
Modeling
Task analyzed scripts
Rehearsal (role play)
Corrective feedback
Reinforcement
Individual Socialization
Social decoding
Generating alternatives
Considering consequences
Decision
Performance
Evaluation
Cognitive Social Skills Training
Process training
Self-management
(self-instruction,
self-monitoring,
self-reinforcement)

FIGURE 1

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Background

CHAPTER 10/
INTEGRATION EFFORTS FOR STUDENTS WITH SEVERE MENTAL RETARDATION

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San Francisco State University

CHARLES A. PECK

Washington State University

P.L. 94-142
Recent research and program development efforts
Child-centered interventions
Interventions with preschool children
Interventions with elementary-age children
Interventions with secondary-age children
Environment-centered research
The Brinker study
The Voeltz studies
The socialization research project
Toward a theory of social competence
Social competence in integrated settings
Social competence
Social perception
Social interaction
Implications for research and policy development
Social integration policy
Research needs
Summary
Reference notes
References

A recent segment of *Good Morning America* included a report regarding the closing of a small elementary school in a middle class suburb in Southern

California. The action was the subject of a particularly prolonged and vigorous series of protests by parents of the children involved. What distinguished this school closing from a myriad of others in the present era of decreasing enrollment was not the distance students would have to travel to a new school (which was only a few blocks away), the inferiority of the new school program, nor the threat of crowded classrooms and overloaded teachers. The central issue protested in this school closing was the disruption of regular contact between the elementary school children and peers enrolled in a special education program for children with severe and multiple handicaps. Significantly, it was the parents of the *nonhandicapped* children, many of whom regularly participated as peer tutors or social companions to the disabled children, who protested the closing of the school most vehemently.

Until the late 1970s, the types of social and educational experiences which motivated these parents to protest the separation of severely handicapped and nonhandicapped school children were not available in public schools in the United States. Indeed, programs which seek to integrate children with severe handicaps into regular school life are just beginning to become common. The existence of programs like the one described above, as well as other integrated school programs from the preschool to secondary levels, are the result of a complex and dynamic set of social-political and educational changes which have taken place over the last few decades.

An important change was reflected in a national right to education movement for moderately and severely handicapped children—who were routinely excluded from school services before the 60s. Fundamentally a parent-initiated campaign, the right to education movement gained professional attention and support and became infused with the egalitarian values of the civil rights era. Thus, the relevance of the segregation issue to special education did not gain widespread attention until the late 60s. On the contrary, the assumption in special education had been that the segregation of handicapped children served a protective and educational function (MacMillan, 1977), even though research directed toward testing this assumption had not produced convincing results (Kirk, 1964; Guskin & Spicker, 1968).

Two relatively new views on special education were advanced in the late 60s which transformed the segregation issue and the related practice of "mainstreaming" into the most hotly contested special education policy debate of the 70s. The first view was articulated in a 1968 paper by Lloyd Dunn entitled "Special Education for the Mildly Retarded—Is Much of It Justifiable?". His argument shifted the "burden of proof" onto special education to show that the potential harms resulting from labeling and segregating children, as well as the extra expense of special classes, could be justified by the superior gains in achievement and adjustment for handicapped students. Since then reviews of empirical evidence related to the efficacy of special education consistently indicate that segregated special education has not convincingly demonstrated its superiority to regular classroom arrangements (Semmel, Gottlieb, & Robinson, 1979; Strain & Kerr, 1981).

The second major viewpoint which accelerated parental and professional concern with the effects of segregation was expressed in the human services philosophy of normalization introduced to this country by Nirje (1969) and most comprehensively articulated by Wolfsenberger (1972). The goal of the normalization movement has been to assure that individuals with disabilities enjoy patterns of life and everyday experiences similar to those of most citizens (Nirje, 1969).

P.L. 94-142

Both the right-to-education movement and the normalization philosophy shaped central provisions of landmark federal legislation passed in 1975: Public Law 94-142. P.L. 94-142 recognized the right of all handicapped children to receive a free and appropriate public education, regardless of the severity of any disability. The integration philosophy expressed in the normalization principle was reflected in a mandate that handicapped children be educated, "to the maximum extent appropriate," with children who are nonhandicapped. While the practice of maximizing the integration of handicapped children into regular public schools became official federal policy with P.L. 94-142, de facto separation and isolation of children with severe handicaps is still the reality in all but a few districts across the nation (Stetson, 1979).

RECENT RESEARCH AND PROGRAM DEVELOPMENT EFFORTS

Research and development efforts related to the social integration of severely handicapped children in public school settings have typically focused on evaluation of interventions aimed at increasing the quantity and quality of cross-group social integration. This is in contrast to the predominant focus of the research literature on integration of mildly handicapped learners, which has usually involved comparing outcomes of integrated and segregated classrooms (see Semmel, Gottlieb, & Robinson, 1979, for a review). A number of researchers have noted that pervasive problems with a) experimental design, b) specification of independent variables defining integration, segregation, or mainstreaming, c) the reliability and validity of measurement and, d) representativeness of research samples prognosticate poorly for future efforts to tease out differences in outcomes associated with integrated or segregated services (MacMillan & Semmel, 1977; Peck

& Cooke, 1983; Strain & Kerr, 1981). Additionally, Peck and Cooke (1983) have argued that much of the effort to bring an empirical orientation to the issue of educational segregation has represented an inappropriate confusion of philosophical and empirical questions. Thus, the question of whether integration is an appropriate societal goal may be viewed as predominantly philosophical in nature. An affirmative answer to that question (as expressed in the 1954 Brown desegregation decision and P.L. 94-142) suggests that empirical inquiry should be focused on *how* to best achieve the goals of social integration.

The intervention research on the integration of children with severe handicaps may be considered in terms of attempts to modify both child and environmental characteristics. This is consistent with formulations from the fields of ecological, behavioral, and personality psychology (Bandura, 1977; Barker, 1968; Lewin, 1951; Mischel, 1968) which conceptualize behavioral adaptation as a function of both personal and environmental factors [B = f(P,E)]. While recognizing the actual interrelating and transactional nature of child and environment characteristics, we will distinguish intervention efforts aimed directly at child behavior change from those directed toward achieving more global environmental or system changes.

Child-Centered Interventions

A consistent finding from direct observational investigations of social integration efforts has been that placing handicapped and nonhandicapped children in the same classroom environment is not likely to produce cross group social interaction (Ballard et al., 1977; Cooke, Cooke, & Apolloni, 1978; Peck, Apolloni, Cooke, & Raver, 1978; Guralnick, 1976). Indeed, there is some evidence that, in the absence of specific intervention, interaction between children with moderate or severe handicaps and nonhandicapped peers may *decrease* over time (Guralnick, 1980, 1981a; Sinson & Wetherick, 1981). Thus, the need for specific programmatic intervention aimed at maximizing the social integration of handicapped and nonhandicapped children has been recognized for sometime now (Snyder, Apolloni, & Cooke, 1977).

Interventions with Preschool Children

A relatively large portion of social integration research directed at the preschool level have been descriptive in nature (Peck & Cooke, 1983). These studies have typically found that mildly handicapped children are relatively well integrated with nonhandicapped peers, while children with increasingly severe handicaps tend to be more isolated (Guralnick, 1980, 1981a; Ispa & Matz, 1978; Sinson & Wetherick, 1981). While these studies provide useful descriptive information, they underscore the need for intervention research directed at improving social integration outcomes for severely handicapped children.

Some successful interventions have been reported which have involved direct teacher modeling and reinforcement of social play between handicapped and nonhandicapped children. For example, Fredericks et al. (1978) described the use of these techniques with six moderately and severely handicapped children in an integrated preschool. They reported increases in cross group social play when teachers modelled and reinforced social interaction in naturally occurring play situations. Although these findings suggest the potential value of their intervention package, the need for its replication is equally clear in view of the correlational nature of the data they report (their design was an AB with no demonstration of experimental control). Other research (Shores, Hester, & Strain, 1976) has indicated that direct teacher intervention in ongoing play interactions between preschool children may have disruptive and decelerating effects on child-child interaction. Research is needed toward delineation of the conditions which may predict the success or failure of the types of teacher-mediated interventions suggested by Fredericks et al. (1978).

Another intervention approach has been pursued with preschool-age children by Cooke and Apolloni, and their colleagues (Apolloni, Cooke, & Cooke, 1977). These investigators have attempted to directly teach handicapped children to imitate nonhandicapped peers: a critical social skill which would likely facilitate further learning and social interaction. An initial investigation was carried out in a highly structured setting with three moderately retarded children and one nonhandicapped peer. Extensive adult prompting and reinforcement techniques were used to increase the handicapped child's imitation of the appropriate materials-use behaviors of the peer model. Some generalization of training effects to a post training situation and to nontrained responses was observed. Similar results were obtained in a subsequent experiment focused on imitation of verbal responses modeled by a nonhandicapped peer. Results of both of these experiments indicated that the Peer Imitation Training did not substantially improve the children's behavior in more naturalistic, free-play settings. Consequently, a third investigation was carried out (Peck, Cooke, Apolloni, & Raver, 1978) which followed suggestions from the generalization literature that training be implemented directly in the natural environment (Stokes & Baer, 1977). Results were more positive. The five children with moderate levels of mental retardation who participated in two experiments described in the study demonstrated increases in peer imitation in both training and naturalistic generalization environments. Concomitant increases were observed in general social interaction between the handicapped children and nonhandicapped peers.

A third approach to increasing social interaction between nonhandicapped and severely handicapped preschool children has involved peer mediated interventions (Strain, Kerr, & Ragland, 1981). Strain and his colleagues have conducted an extensive line of investigations on the use of peer initiations as a means of increasing social interaction between handicapped and nonhandicapped children. In an early study, Strain, Shores, and Timm (1977) taught specific verbal and gestural social interaction skills to nonhandicapped children for use with severely handicapped peers. Increases in initiations by nonhandicapped peers were associated with increased social responses and initiations by the handicapped children. This technique was later replicated with moderately retarded children, and effects were observed to generalize across setting and maintain through a next day follow-up (Strain, 1977).

Ragland, Kerr, and Strain (1978) then attempted peer initiation procedures with children diagnosed as autistic. The subjects in this investigation also demonstrated increases in positive social behavior with the nonhandicapped peer when the peer initiation technique was implemented. However, Ragland et al. also observed increases in the autistic childrens' negative affective behaviors such as crying, screaming, or escape attempts when peers initiated interaction with them. Similar negative side-effects reported by Nordquist (1978) using a peer-mediated intervention strategy with an autistic child suggest that this population may continue to present unique challenges to interventionists even when some targeted behavior changes are achieved.

Further work by Strain and his associates has involved direct comparison of different peer-mediated intervention techniques (Strain, Kerr, & Ragland, 1979) and assessment of conditions facilitating generalization of behavior changes achieved with the peer initiation procedure (Strain, 1983). The Strain et al. (1979) study consisted of comparing the peer initiation technique to peer mediated direct prompting and reinforcement of social responses. Both procedures produced positive behavior change, and in comparable amounts. Neither procedure was associated with generalized behavior change.

In the later study, Strain (1983) carried out the peer initiation intervention with four "autistic-like" boys with varying degrees of moderate to severe mental retardation. The central question in this study was whether differential generalization effects would be associated with the integrated or segregated nature of the generalization environment—a recess time in the school gym. Results for all four subjects demonstrated that superior generalization of treatment gains was achieved in the integrated situation. These results offer some of the strongest empirical support to date for the functional effects of social integration on children's performance.

Interventions with Elementary-Age Children

Unfortunately, relatively little child change research has been conducted related to facilitating direct social interaction between severely handicapped and nonhandicapped children at the elementary-age level. A notable exception is a report by Russo and Koegel (1977). These authors described the use of behavioral techniques to integrate an autistic child into a regular elementary classroom. A package of behavior modification techniques was used to: a) improve the child's social behavior; b) reduce self stimulation behaviors; and c) increase her verbal responses to commands. The package was effective in changing each of the targeted behaviors, and the child was successfully mainstreamed in a kindergarten classroom where the program was implemented by the regular teacher. Unfortunately, the child's maladaptive behaviors returned to baseline levels when she was transferred to a first grade classroom. When the new teacher was trained to implement the program, the child recovered previous gains. The Russo and Koegel report currently represents the most carefully operationalized and empirically valid effort to integrate a severely handicapped child into a regular elementary classroom.

Interventions with Secondary-Age Children

A number of social integration efforts have been conducted with junior high school and high school students which have focused on changing the behavior of the handicapped or nonhandicapped students involved. These reports have usually been based on integration programs implemented in recreational settings. For example, Johnson et al. (1979) utilized a cooperative goal structuring strategy (Johnson & Johnson, 1975) to increase positive social interaction between nonhandicapped and moderately retarded junior high school students. Thirty students (12 handicapped and 18 nonhandicapped) were randomly assigned to bowling teams which differed by the goals which defined "winning." Cooperative teams were instructed to maximize the group's score, and to assist each other in improving their bowling skills. Individualistic conditions consisted of giving each student instructions to maximize his or her own score. A third group, labelled "laissez faire" received no special instructions. Results for both handicapped and nonhandicapped students indicated that the cooperative condition was associated with much higher levels of positive social interaction than either the individualistic or the laissez faire conditions. The study was replicated by Rynders, Johnson, Johnson, and Schmidt, (1980) with similar results. The Rynders et al. study extended earlier findings by revealing that higher sociometric ratings of handicapped bowlers by nonhandicapped teammates were obtained under the cooperative condition, and that praise and support from nonhandicapped students was higher for both handicapped and other nonhandicapped teammates under the cooperative goal structure. These results are most encouraging in light of the common assumption that the predictably subaverage performance of the handicapped students would be likely to negatively affect attitudes toward them. The consistency of supportive findings across populations (Johnson & Johnson, 1980) suggests that cooperative goal structuring may be a particularly fruitful strategy for promoting positive outcomes of integration experiences for handicapped and nonhandicapped children.

Santomier and Kopczuk (1981) reported results of pairing junior high-age nonhandicapped students with moderately handicapped agemates for a series of physical education periods conducted twice a week for 14 weeks. Experimental groups compared the effects of the pairing intervention with and without accompanying teacher praise for social interaction between handicapped and nonhandicapped students, and with a control group which received no specific interaction intervention. Analysis of the pre-posttest difference scores indicated that the group receiving the pairing and social praise package demonstrated significantly more positive interaction between handicapped and nonhandicapped students.

Similar programmatic objectives were pursued by Donder and Nietupski (1981). These authors developed a program of recreational integration involving three junior high school students with moderate mental retardation and 14 nonhandicapped peers. The nonhandicapped students volunteered to participate in two one-hour training sessions which prepared them to tutor the handicapped students in age-appropriate playground skills. The training sessions were followed up on the playground with feedback regarding use of basic teaching techniques. A multiple baseline across subjects design was employed to assess the effects of the program in establishing and maintaining positive social interaction between the handicapped students and their nonhandicapped peers. Baseline social behavior observations revealed high rates of inappropriate interaction for each subject. This pattern was dramatically altered with implementation of the intervention program, producing substantial and durable (at two weeks post-intervention) increases in positive cross-group social interaction.

Environment-Centered Research

Environment-centered research tends to be broader in scope and more diffuse in operationalization of the independent variable under investigation than does child-centered research. In addition, environment-centered research tends to be large scale involving the comparison of sizable groups of students under different educational conditions.

A typical environment-centered research question would be: what are the effects of integrated versus segregated settings upon students? The segregated setting might be a school or group of schools who have no severely handicapped students on their campus. The integrated setting might be a school that has at least one class of severely handicapped students on its campus. Immediately, it can be seen that the variable of integrated versus segregated is rather gross with respect to operational detail. For example, an integrated school could have one, two or more classes of students with severe handicaps. The number and proportion of severely handicapped students might vary considerably (e.g., 1–50 percent of the school). The class(es) might be centrally situated in the school building or they could be on the periphery of the campus. The special education program could be administered by the same school district as the regular school program or it might be run by a different administrative unit. These and other factors may lessen the degree of control of the independent variable when comparisons are made between integrated and segregated groups of students. Still, some investigators have taken precautions to operationalize their contrast groups with an impressive degree of specificity (cf., Voeltz, 1980, 1982, Note 1).

The Brinker Study

One large-scale study by Brinker (Note 2) made global contrasts of integrated and segregated programs. The most impressive characteristic of the study is its comprehensive sampling of 14 varied school districts across the United States. A total of 328 nonhandicapped students (age 5–18 years) were administered different forms of Voeltz's Acceptance Scale. A total of 158 students (83 female and 75 male) attended segregated public schools where there were no severely handicapped students present. A sample of 170 students (125 female and 45 male) attended integrated schools and were nominated by special education teachers at the school for having substantial amount of contact with their severely handicapped students. The two groups of students were matched according to grade level and schools of similar size and socioeconomic status. The scale was administered to all of the students in the Fall of 1981 (pretest) and in the Spring of 1982 (posttest).

The results showed significantly more positive attitudes toward handicapped persons (total Acceptance Scale score) for the integrated (versus segregated) students in the third through twelfth grades. There were no differences between groups in the kindergarten through second grades. In addition, there were no changes from pretest to posttest. Finally, there were significant sex differences across all grades with females having more accepting attitudes than males. Thus, positive effects of integration in leading to more positive attitudes toward handicapped persons were apparent from this large scale study.

The Voeltz Studies

The studies by Voeltz (1980, 1982, Note 1) further partitioned the independent variable into the types of contact possible at an integrated school. The Brinker attitude study had contrasted nonhandicapped students at segregated sites with nonhandicapped students nominated by special education teachers as having had considerable contact with severely handicapped students. The Voeltz research took another direction. She had three groups comprising the independent variable. All of the students were in the fourth through sixth grades. One sample of students attended schools where there were no severely handicapped students (no contact). Another sample of nonhandicapped students attended integrated schools without a systematic program to facilitate interaction between severely handicapped and nonhandicapped students (low contact). A third sample of students (high contact) attended integrated schools where a systematic program was in effect to promote positive interactions and attitudes between nonhandicapped and severely handicapped students. The program had two components. Students at the schools received a slide/sound presentation describing severely handicapped students enrolled at that school, followed by a brief question and answer period. Next, about half of the students in the school participated in a "special friends" program.

The Acceptance Scale was administered to all students at each of the schools (Voeltz, Note 1). There were two schools in the "no contact" sample (n = 288), two schools in the "low contact" sample (n = 330), and one school in the "high contact" sample (n = 254). The first administration of the scale, in the Fall 1978, occurred after the low and high contact schools had experienced a year of integration and the high contact school had undergone a semester of the systematic program. The high contact group was found to have higher acceptance scores than the low contact group, which had higher scores than the no contact group. These differences may reflect the benefits of social integration. The Fall scores also support the benefits of the systematic programming over no programming in integrated sites.

Taken as a whole, the work by Voeltz (1980, 1982, Note 1) represents our most comprehensive body of knowledge describing the positive effects of school-wide integration and systematic programming. The series of studies used large samples, were longitudinal, built in meaningful contrast groups and used elegant statistical analyses. On the negative side, there was not random assignment to the experimental groups; although randomization procedures are not likely to be found in large-scale evaluation research because of practical and logistical problems. There was no true pretest so there is uncertainty about the equivalence of the experimental groups before integration took place. In addition, there were demographic differences between the groups in that the low contact schools were urban, the no contact schools were rural and suburban, and the high contact school was suburban (although achievement score data indicated the equivalence of the students in reading and math achievement across the five schools; Voeltz, 1982, Table 1). Finally, there is a concern that the high contact findings were obtained at one school. Notably, the findings of the Brinker investigation, which were collected across a wide variety of school districts, generally support the results of the Voeltz studies.

The Socialization Research Project

A third group of investigators (Haring, Breen, Pitts-Conway, Lee, & Gaylord-Ross, Note 3) have examined the behavior of nonhandicapped adolescents toward handicapped students. The data for the project are still being collected but preliminary findings on 25 students are reported here. The study was conducted at a single secondary site in a suburban public high school in California. The school had one severely handicapped class and two other special education classes on the campus.

The independent variable partitioned three groups of 10th–12th grade students. There was no segregated (no contact) group since all of the students attended a school where there was a class of severely handicapped students. However, a control group was constructed of students who volunteered for the interaction program with the severely handicapped class but were not selected to participate that semester. In the clinical research literature this would be referred to as a waiting list control group since these students did eventually participate in the interaction program, but not during the semester under study. The waiting list control group design has an advantage over other kinds of control groups because the waiting and treatment groups have expressed similar interests and commitment in becoming involved with the treatment

The Socialization Research Project study allowed students to select two types of social interaction programs. A Peer Tutoring Program had students come to the special education class for one 45-minute period per day, five days per week, for a 4½ month semester (September through January or February through June). During the period the peer tutor would teach the handicapped student some tasks from the latter's IEP. The peer tutors were taught the rudiments of systematic instruction (Snell, 1978).

A second group of students enrolled in a Special Friends program. The Special Friends group of nonhandicapped students met for the same time segments as the peer tutors, although some of their interaction was conducted outside of the special education classroom. The Special Friends program consisted of pairing a severely handicapped student with a nonhandicapped student to participate in social/leisure activities. They were instructed to "play" together and no tutorial role was designated for the nonhandicapped student. The nonhandicapped student was not taught or expected to use the methods of systematic instruction. Some of the social/leisure activities which the special friends engaged in were tennis, video games, and checkers.

The dependent variable in the study was a "behavioral probe" where a nonhandicapped student came to a room and was told to wait to be interviewed. Another person sat across from the waiting student. The waiting period lasted five minutes. The nonhandicapped student (in separate sessions) was exposed to three different kinds of persons while waiting. One individual was an unfamiliar autistic person. A second person was a familiar autistic youth. The third person was an unfamiliar nonhandicapped person. All of the waiting persons were male and between the ages of 18 and 25. An unobtrusive observer sat in the corner of the room and recorded the duration of social interactions between the two individuals. The waiting confederate never initiated an interaction and made minimal social responses to the nonhandicapped student under investigation.

All of the participants were probed before the beginning of the intervention (pretest) and were posttested after the completion of the Special Friends and Peer Tutoring programs. The control group essentially emitted no interactions. The social interaction groups were basically noninteractive during the pretest probe. Upon posttesting, though, a number of interesting trends emerged. First, there was zero interaction with the unfamiliar nonhandicapped person. Second, there was a sizeable increase in interaction with the unfamiliar autistic person for both special friends and peer tutors. Third, there was even greater interaction with the familiar autistic peer, with the Special Friends group having a much longer duration of interaction than the peer tutors.

The behavioral probe data indicate that interaction programs do appear to lead to the development of social skills among nonhandicapped adolescents toward their autistic peers. There is a proclivity to interact longer with familiar autistic persons and this effect seems more pronounced when the student has participated in a special friends rather than a peer tutoring program. These results thus provide some preliminary support to Voeltz's contention that special friends is a preferred interaction program to peer tutoring. More importantly, the findings support the earlier work by Brinker and Voeltz suggesting that integrated school settings which promote social interaction tend to produce positive behavioral and attitudinal development among nonhandicapped students toward their severely handicapped peers.

Toward a Theory of Social Competence

Given the burgeoning research and policy interest in educational integration, it would be helpful to formulate a model or theory which articulates relationships between integration experiences and social development among severely handicapped individuals. Such a model would help synthesize past empirical findings and guide future research and program development efforts.

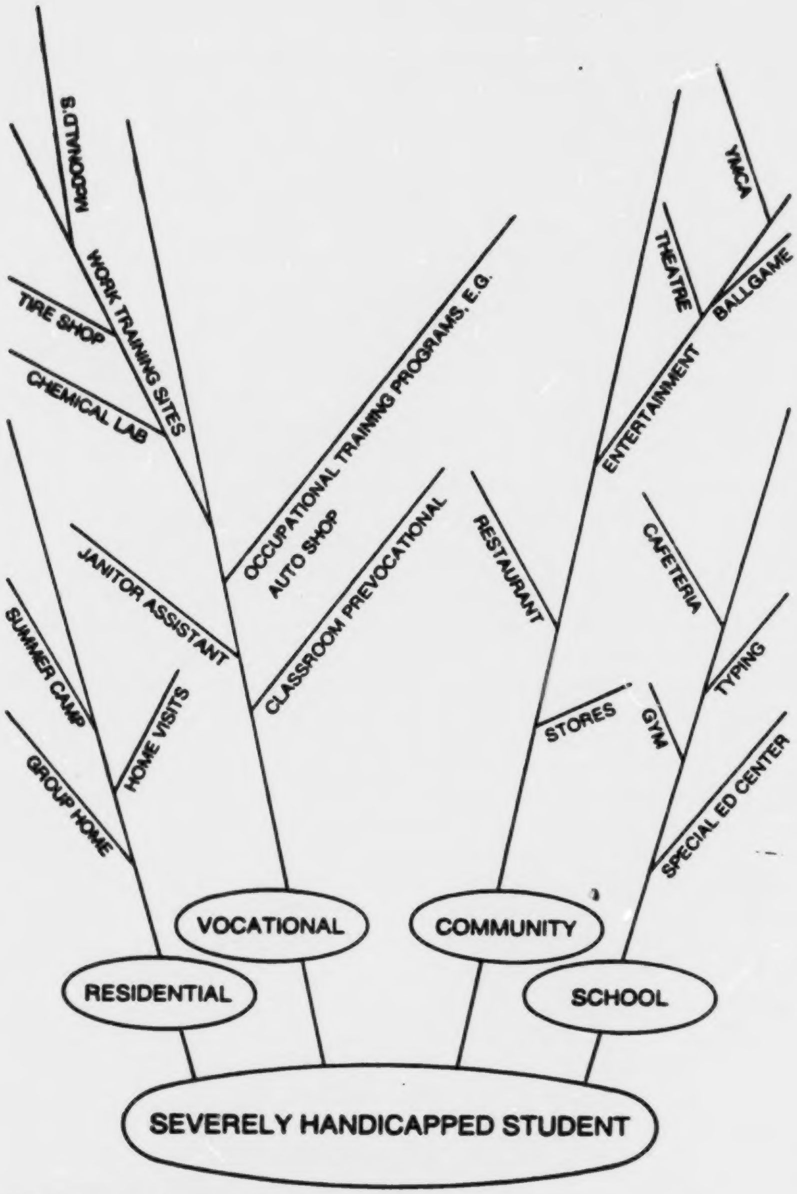
The polemics with the controversy of integration versus segregation have a historical parallel in the nature versus nurture controversy regarding the bases of human intelligence. The nature-nurture question was originally posed as whether intelligence was determined completely by one's native endowment or by the external environment. As the science of psychometrics and behavioral genetics evolved, certain investigators (e.g., Jensen, 1969) quantified the relative contributions of environment and heredity to intelligence in terms of an additive formula. In this formula, biological factors accounted for 80 percent of an individual's intelligence. The either-or and additive approaches to explaining intelligence were rejected by Hirsch (1975), an eminent behavioral geneticist. Hirsch described an alternative conceptualization, a range of reaction notion which had been developed with nonhuman species. The range of reaction model postulates that a given genetic trait may be expressed in multiple ways given environmental variety. Furthermore, the model states that one can never make a complete determination of an individual's intelligence (a trait) until the organism has been exposed to a wide variety of environments. Thus, there is not a singular or dual causality of intelligence, heredity and/or the environment. Rather, the genotype interacts with a multiplicity of environments to produce a composite portrayal of phenotypical intelligence.

The range of reaction notion has critical implications for educational programming of severely handicapped students. Figure 10.1 presents a scheme for the social integration of handicapped students which mirrors the range of reaction model. Here, the severely handicapped individual appears in the center of the fan. Moving out from the individual are different environments with which the person comes into contact, e.g., vocational, residential, community, school. The individual displays a variety of behaviors across these multiple environments.

With respect to the integration-segregation issue, integrated environments are likely to have more differentiated fans—that is, the individual may have substantial contact with many environments. Segregated settings, by definition, expose the person to fewer environments. Thus, integrated settings present a wide range of situational stimuli. The important point is that these represent opportunities for the individual to develop a rich repertoire of responses to these environmental demands. The highly differentiated environment induces the development of skills and behaviors that never would have been observed in less differentiated settings. Thus, the potential of the severely handicapped individual can only be accurately assessed after there has been substantial exposure to a variety of environments (Strain, 1983).

Social Competence in Integrated Settings

Let us further examine the types of environments and interactions that would occur in integrated and segregated settings. In the segregated secondary school there would be the special education classroom. Students are likely to spend a great proportion of their instructional day in the self-contained classroom. The school might also have a multi-purpose room for adaptive physical education and other sensorimotor activities. There



McDONALD'S
WORK TRAINING SITES
TIRE SHOP
CHEMICAL LAB
OCCUPATIONAL TRAINING PROGRAMS, E.G.
AUTO SHOP
JANITOR ASSISTANT
CLASSROOM PREVOCATIONAL
SUMMER CAMP
HOME VISITS
GROUP HOME
YMCA
THEATRE
BALLGAME
ENTERTAINMENT
RESTAURANT
CAFETERIA
TYPING
STORES
GYM
SPECIAL ED CENTER
VOCATIONAL
COMMUNITY
RESIDENTIAL
SCHOOL
SEVERELY HANDICAPPED STUDENT

Figure 10.1 **Schematic of a differentiated, integrated environment.**

may also be clinical offices for speech or occupational therapy. There is likely to be an outdoor playground for recess and there may be a cafeteria for lunch. The interactions occurring in these subenvironments are with adult staff or with handicapped peers.

In contrast, in the integrated secondary school setting there is a greater number of subenvironments. The large public high school is typically a vast resource of many academic, vocational, and recreational environments. The resourceful teacher of severely handicapped students can get his/her students involved in many program offerings. Through these normalizing experiences the student may become more socially competent in dealing with the surrounding world.

Social Competence

The integration of severely handicapped persons should not be viewed as an additive process where segregated and integrated settings produce increased effects upon the individual's functioning. Rather, a nonlinear, fan-shaped model was proposed which defined social competence in terms of the conglomerate of skills needed to perform in a range of varied environments. Thus, as the person is exposed and successfully adapts to a variety of environments his opportunities for learning skills related to social competence increases.

Interestingly, our notion of social competence also has implications for the basic definition of handicapping conditions. Tredgold (1937) stated that the severity of a handicap was the degree to which an individual needed the mediation of another person in order to function in society. Thus, the amount of social assistance received from others defines the severity of handicap. As assistance or supervision is faded, the severity of the condition subsides. This relationship is exemplified in vocational programs where proximity fading gradually decreases the supervisory role of the instructor (Pumpian, Note 4; Wehman et al., 1982). Further, Brinker (Note 2) has stated that "as the number of contexts within which an individual can interact increases and as the complexity of social interactions within contexts increases, the level of an individual's handicap decreases." This point is consistent with our idea of the range of environments. That is, as social competence increases, the individual must correspondingly be viewed as less handicapped.

Social Perception

When handicapped persons become more proficient in a variety of environments there is a correlated effect upon how they are perceived by the nonhandicapped population. For example, in the Technological Employment

Project (Gaylord-Ross, Forte, & Gaylord-Ross, Note 5), seriously handicapped students were required to handle technically complex equipment, e.g., viscosity chambers, wore laboratory garb like safety glasses, and had to ambulate through a laboratory crowded with equipment and technicians. Visitors to the project undoubtedly remarked that the students did not appear "that" handicapped. While a majority of the students did have psychometric diagnoses in the moderate range of mental retardation, the social perception of them in this impressive technological context led observers to believe that they were "not very handicapped." Perske (1972) has referred to the "dignity of risk" as the circumstance where handicapped students accrue dignity when they are placed in settings where there are tangible risks, e.g., school failure, danger crossing streets. The social perception of handicapped persons is elevated when a nonhandicapped observer realizes that she or he could not immediately step into the vocational role and perform a task successfully.

Social Interaction

Training for increased social competence appears to elevate the social perception of handicapped individuals. In turn, the nonhandicapped person is more likely to socially interact with this more competent handicapped peer. Strain (1981) has reported data which indirectly support this notion: working with mildly handicapped and nonhandicapped children of elementary-age, Strain reported improvements on measures of positive social interaction and social attraction when an intervention package was implemented consisting of assigning handicapped children as team captains, manipulation of the handicapped child's score to ensure she or he won prizes, and allowing the handicapped child to distribute the prizes to teammates. Replication of a similar procedure with severely handicapped populations would be most useful. Given the potential for training severely handicapped students to perform technical work skills, vocational contexts may be useful settings for promoting the actual and perceived social competence of handicapped persons.

IMPLICATIONS FOR RESEARCH AND POLICY DEVELOPMENT

Social Integration Policy

A number of specific policy questions are embedded in the issues surrounding social integration of students with severe handicaps. A primary question is simply whether the social integration of students with severe handicaps is feasible within public school systems. While "feasibility" may be considered to be a function of a complex set of variables (Guralnick, 1981b), existing research convincingly demonstrates the *possibility* of integrating even the most severely handicapped students (Russo & Koegel, 1977; Stetson, 1979; Voeltz, 1980, 1982). These demonstrations highlight the importance of environmental factors in determining the outcomes of integration efforts. The critical policy issue thus shifts from "is this student too handicapped?" to "is this environment sufficiently supportive?" to achieve positive integration outcomes.

A second question with important policy implications regards whether social integration experiences produce developmental growth for the handicapped student involved. Certainly, there are theoretical reasons to believe that integration does facilitate social and cognitive development (Apolloni & Cooke, 1975; Bricker, 1978; Brown et al., 1979; Hartup, 1978). However, at present, empirical evidence for developmental effects due to integration is limited at best (Peck & Cooke, 1983; Semmel, Gottlieb, & Robinson, 1979). Again, existing demonstrations of increases in relevant social skills with specific interventions in integrated settings support the *possibility* of significantly accelerating social development (Peck et al., 1978; Strain et al., 1979). However the limitations of these studies must be acknowledged, particularly with respect to the moderate rather than more severely handicapped nature of the populations studied. Finally, the issue of identifying developmental effects due to integration carries all of the conceptual and philosophical complexities of the general issue of the educability of children with severe handicaps (Baer, 1981; Noonan et al., 1982; Kaufman & Krouse, 1981). A satisfactory empirical answer to this question will be most difficult to obtain.

A third set of policy issues center around the effects of social integration on nonhandicapped students. The typical focus of research in this area has been on changes in the attitudes of nonhandicapped students toward handicapped peers. The research reviewed above suggests that positive attitudinal outcomes are most likely when systematic, structured contact is arranged between nonhandicapped and severely handicapped students (Brinker, Note 2; Voeltz, 1980, 1982). Additionally, some evidence suggests that contacts designed to promote leisure/recreational relationships rather than instructional (i.e., peer tutor) relationships may be more likely to promote positive cross-group social interaction (Haring et al., Note 3).

Research Needs

The suggestions for research outlined below reflect an emphasis on the need to expand existing knowledge and procedures for promoting the social integration of children with severe handicaps.

First, the need exists for process-oriented studies with more severely retarded populations than have typically been investigated. These studies should provide descriptive information regarding the nature of social interactions between nonhandicapped and severely retarded children, test the usefulness of procedures demonstrated with preschool-age and moderately retarded populations, and provide feedback regarding the effects of additional child-centered and environment-centered interventions. In this context, the use of multiple dependent measures, tapping behavioral and attitudinal change (e.g., Strain, 1981), will yield a more substantial data base from which researchers can more clearly interpret the effects of integration efforts.

A second major research need is related to issues of the external validity or generalizability of existing and future demonstration studies. Specifically, additional attention must be devoted to assessing possible interactions between characteristics of settings, participants, and treatments if accurate predictions are to be made regarding the replicability of results (Campbell & Stanley, 1963; Kazdin, 1981). The increased use of between-group factorial designs, where treatment effects are contrasted across types of subjects or settings, or where differing values of the treatment variable are contrasted (e.g., Voeltz, 1980, 1982) represents one strategy for the direct assessment of external validity issues (Kazdin, 1981). Intra-subject designs with systematic replications (Sidman, 1960) or multi-element designs, where treatment effects are directly contrasted in varying contexts represent idiographic approaches which generate data related to the external validity of results.

A third area in which further research is immediately needed regards clarification of issues related to the nonhandicapped children involved in social integration efforts. While all integration projects proceed under the assumption that no harm is done to participating nonhandicapped students (Scriven, 1976), few attempts to empirically investigate this issue have been reported. The anecdote reported at the beginning of the present chapter suggests that, indeed, some positive effects may accrue to nonhandicapped children who participate in social integration programs. Research directed toward assessing such effects might include measures of affective growth, moral development, or social cognition.

Additional issues related to nonhandicapped children which merit investigation include identification of child characteristics which predict differential outcomes of social integration efforts. Existing data suggest that both the sex and the age of nonhandicapped peers may be associated with differences in attitudes toward handicapped peers (Brinker, Note 2; Gottlieb, 1978; Gottlieb & Switsky, 1982; Voeltz, 1980). If these or other factors impact peer attitudes, important implications would be derived for both the selection and preparation of nonhandicapped children for integration experiences.

SUMMARY

The social integration of individuals with severe handicaps represents a social-political goal consistent with the philosophical principles of a pluralistic, egalitarian society. A theoretical model is advanced regarding the educational value of social integration. The contribution of research is seen in the development and evaluation of programmatic strategies for achieving social integration goals. Existing research demonstrates the *possibility* of achieving positive behavioral and attitudinal outcomes when integrating severely handicapped and nonhandicapped students, and suggests some specific intervention procedures for promoting these outcomes. However, the existing empirical knowledge base is limited to a rather narrow range of subjects, settings, and interventions, and must be systematically expanded if research results are to be more useful to policy makers and teachers. Suggested directions for future research include increased attention to outcomes for students with more severe levels of mental retardation, more systematic assessment of the generalizability of research findings, and more thorough study of effects on nonhandicapped children.

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SEVERE MENTAL RETARDATION:

FROM THEORY TO PRACTICE

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An Ecosocial View of School and Work:

Social Skills, Social Support, and Quality of Life

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Abstract

As persons with disabilities are increasingly placed in regular school, work, and community settings there has been a growing interest in the resulting quality of life of these contexts. This article reviews the empirical research on three important constructs related to the integration process: quality of life, social support, social skills training. Attention is given to the types of measures and interventions utilized in research on these constructs. A particular emphasis is directed toward persons with mental retardation in employment settings. Finally, an ecosocial model of integrated life is advanced as a means to drive and explain research efforts, as well as to identify the need for the development of more powerful interventions. The ecosocial model includes intra-individual, interactional, interpersonal, and macro-setting factors.

An Ecosocial View of School and Work: Social Skills, Social Support, and Quality of Life

As increasing numbers of disabled persons have been placed in regular school and work settings, new issues have arisen regarding the success of these integration and mainstreaming efforts. An earlier literature has shown that just physically placing a disabled student in an integrated site did not guarantee that the person would have substantive social contact with peers (Baldwin et al., 1978; Gresham, 1983). It is possible, and often likely that the individual may remain isolated, with little resulting interaction or friendship development. Fortunately, a social skills training research literature has emerged, showing that under certain circumstances a disabled individual may be trained to be more socially skillful (Cooke, Appolloni, & Strain, 1978; Walker, Strain, & Guralnick, 1986). Whether such interventions have been completely successful remains a matter of debate (cf. Gresham, 1984, Strain, 1984). Success in this light tends to mean substantive social interaction, being perceived as socially competent, social acceptance and support by peers, and a generally high quality of social life. Each of these constructs reflect a large data base. In this paper we will attempt to review existing literature related to socialization at school and work, particularly with the developmentally disabled population. Since many previous reviews have focused on school integration, an emphasis will be given to social life in employment settings, a topic which has received relatively little attention. A taking stock of extant concepts and research is made with regard to quality of life, social support, and social skills training. Subsequently, an ecosocial theory is advanced as a way to conceptualize the socialization process of the disabled person, which may drive further advances in research, intervention, and policy.

Quality of Life

Quality of life and personal life satisfaction are concepts which have been recognized only recently as important components of program developments for disabled individuals. The effective evaluation of treatment outcomes and environments must take into account whether they contribute to positive, rewarding lifestyles. To date no universal definition of quality of life has been formulated. Landesman (1986) has articulated a number of questions which need to be addressed when considering quality of life: what does the concept of quality of life encompass; how can it be operationally defined; how can it be measured, and; what environmental variables are likely to affect quality of life. Attempts to provide answers to such questions have come from several studies in recent years investigating quality of life and personal life satisfaction (Heal & Chadsey-Rusch, 1985; Hill, Rotegard, & Bruininks, 1984; Inge, Banks, Wehman, Hill, & Shafer, 1988; Schalock, 1986; Schalock et al., in press; Schalock & Lilley, 1980; Seltzer, 1984). Although there is not total agreement across all these studies as to what quality of life includes, there appears to be some consensus among them that quality of life is related to the level of social support from friends, family, and the community available to the disabled individual. Hill, Rotegard, and Bruininks (1984) included satisfaction with friends as a measure of happiness with life. Schalock and Lilley included social interaction with friends and family in measuring quality of life. Inge et al. (1988) believed quality of life to be associated with the level of integration and acceptance an individual has with other people.

In addition to social factors, past studies identified other variables associated with quality of life. Heal and Chadsey-Rusch (1985) identified the residence, community setting, and services as affecting an individual's life satisfaction. Schalock and Lilley (1980) characterized quality of life as also including the level of environmental control and community utilization of an individual. Hill et al. (1984) also believed that the level of leisure activities affected quality of life. Yet, the apparent common factor found across all of these studies was the level of social interaction and support from family, friends, and other social contacts.

Just as quality of life has been defined in a variety of ways, so too its measurement has lacked a standard approach. Some researchers have developed life satisfaction quality of life scales which provide a total numerical score and separate subscales (Heals, Chadsey-Rusch, 1985; Schalock & Lilley, 1986). Questionnaires have been designed which yield information that can be catalogued and compared regarding activities, behavioral characteristics, and social contact of individuals (Hill, Rotegard, & Bruininks, 1984; Inge et al., 1988; Schalock & Lilley, 1986). Some have used standardized measures such as Adaptive Behavior Scales (ABS) and physical health examinations (Inge et al., 1988) in combination with these other measures.

One issue important when investigating quality of life is whether to measure quality of life subjectively or objectively. The objective approach to the measurement of quality of life assesses the external conditions of an individual's life. Objective measures reflect an observable condition of an individual's life. Objective measures identified for community life and work life have included: a) adequate and fair compensation; b) safe and healthy existing skills; c) opportunity to use and develop existing skills; d) opportunity for continued growth and security; e) social integration in the work organization; f) the rights of privacy, free speech, equity and due process in the work organization, and; g) balance between work and non-working time (Walton, 1973). Quality of work life has become increasingly important in describing and improving the environmental and humanistic variables present in the work place as seen in the popular books "In Search of Excellence," (Peters & Waterman, 1982) and "A Passion for Excellence" (Peters & Austin, 1985). Schalock and Hill (1986) have identified quality of work life indicators relevant to developmentally disabled individuals to be decreases in intensive training and supervision, accessibility, integrated work experiences, marketable skills, and normal work schedules. With the current emphasis on employment for disabled individuals in the competitive job market, quality of work life becomes an important consideration in assessing the outcome of programmatic changes for these individuals. Finally, other objective measures to consider in assessing the quality of community life were proposed by Brown, Ditler, Yordon, Fordyce, and Jacobs (1984). They included mobility, appearance, physical condition, activity level, community involvement, social and recreation activities, individual decision making, and living arrangements.

The alternative to assessing quality of life from an objective perspective is to assess it from a subjective point of view. This perspective requires one to focus on the individual's perceptions and evaluation of her life experiences. It has been recognized that people tend to separate out their perceptions of the environment into the material aspects, social aspects, and general activities (Baker & Intagliata 1982). The life experience or life domains common across national surveys of typical Americans (Andrews & Withey, 1976; Campbell, Converse, & Rodgers, 1976; Flanagan, 1978) are work, leisure, relations with family members, relations with friends, financial situation, health, social environment, physical environment, and self-fulfillment. Obviously, the most comprehensive assessment of quality of life would include both the subjectively evaluated experience of the individuals and an objective determination based on external conditions.

Several studies conducted in recent years have examined the quality of life of disabled individuals in relation to their place of residence. Other studies have focused on their quality of work life. A comparison of elements of these studies is found in Table 1. Hill, Rotegard, and Bruininks (1984), using a large national sample, compared the quality of life of disabled individuals living in state institutions to that of individuals living in community residential facilities. Direct care staff were interviewed and completed a Behavioral Characteristic Assessment scale which included social interaction, independent functioning, decision making items, and a questionnaire which gathered information about the client's program and services, characteristics of the environment, leisure activities, and family and social contacts. The study found that individuals living in community residential facilities did better on measures of behavioral characteristics, leisure activities, and social life in general. Both groups had very limited interactions with nonhandicapped peers and relied heavily on family for social contact. While only half of the residents in community residential facilities had friendship relationships with residents, that was twice as many as those living in state institutions. Since leisure activities and social contacts were regarded as the measure of quality of life, individuals living in the community had a significantly higher quality of life. The results lead the researchers to the conclusion that individual attention and individually suitable activities are at the core of quality of life and that family, leisure, and social activities warrant formal recognition in program planning.

Insert Table 1 about here

The Hill et al. study utilized objective measures by counting the number and kinds of activities and contacts in which the residents engaged. The study did not address the satisfaction personally experienced by the client. In contrast, Heal and Chadsey-Rusch (1985) believed that quality of life must be assessed from the personal viewpoint, i.e, how happy were individuals with their situation. Such an assessment would be more aptly termed a satisfaction scale and the purpose of their study was to develop a reliable instrument to assess a disabled individual's satisfaction with their life (and to control for acquiescence response bias). The Residential Satisfaction Scale (RSS) (Novak, Heal, Pilewski & Laidlaw, 1980) was developed to measure a disabled person's satisfaction with their residence, friends, community services, and opportunities. A total of 38 participants were interviewed using the RSS. The test has the subscales of: community satisfaction, friends and free time, satisfaction with services, general satisfaction, and acquiescence. It was found that the apartment dwellers were significantly more satisfied with their community than those living in larger, intermediate care facilities. Interestingly, there was little difference in the satisfaction level of the two groups with their friends and free time.

Schalock and Keith (1984) also developed a Quality of Life (QOL) questionnaire and carried out several studies. One study (Keith, Schalock, & Hoffman, 1986) compared the QOL indices for persons in various levels of community-based training programs for disabled individuals. Disabled individuals in competitive employment had a significantly higher quality of life score than those in on-the-job training or in sheltered workshops. Mentally retarded individuals living independently had a significantly higher quality of life score than those in small group homes or in larger group homes, significantly lower than that of their nondisabled neighbors who lived within a two block radius. Brickey, Campbell, and Browning (1985) found that mentally retarded clients who retained competitive employment placements had parents who had a great deal of influence over the individual, wanted them to work, and were their principal advocates.

Another study (Schalock & Lilly, 1986) determned the relative contribution of predictor variables to the quality of life of disabled individuals in the community. The most significant predictor of quality of life indices was family involvement. Family support for community-bases placements was strongly correlated with successful living and employment. Interestingly, individuals living independently but unemployed or attending a worksop revelaled themselves to be lonely, to have more fragile support systems that relied on roommates and trainers, and to be lacking in social and adaptive behaviors. Yet, individuals living independently and competitively employed had QOL scores approaching that of non-disabled individuals. On the average, however, the QOL score for disabled individuals was low and below that of nondisabled persons.

Two other studies have focused on the relationship of quality of life and employment status. Inge, Banks, Wehman, Hill, and Shafer (1988) found that placement in supported employment resulted in positive quality of life changes. A sample of 20 participants in a supported employment program were matched with 20 other individuals who were workshop clients. All participants lived with their family. All of the supported employment clients had been in their placement a minimum of six months and had no previous work history. Each participant was matched on age, sex, physical/sensory involvement, functional level, inappropriate behavior, work skills, and parent support. The workshop clients were identified as ready for community-work placement. All participants were assessed quarterly for one year, using an adaptive behavior scale, a physical health scale, and a community integration scale.

On the adaptive behavior scale there were significant increases for the supported employment (but not workshops) clients in economic activity, language development, and numbers and time concepts. On the community integration survey instrument clients in supported employment significantly increased their community participation, social/vocational, fiscal responsibility, financial activity and income in comparison to the control group. The study concluded that integrated competitive employment not only enhanced skill acquisition in some areas, but also improved community integration and positively affected the lives of the clients.

Seltzer (1984) conducted a study which reached similar conclusions. The study investigated the relationship between upward/downward job mobility and job satisfaction. It examined the factors in job performance, the work environment, and community adjustment which correlated with job satisfaction. Job satisfaction was assessed using a modified version of the Job Description Index (Smith, Kendall, & Hulin, 1969), a widely used job satisfaction scale developed for the general public. Seltzer modified the instrument from a self-administered, single word test to a structured interview. The instrument controlled for acquiescence by having an equal number of favorable and nonfavorable items. Subscales included supervision, co-workers, pay, promotion and work tasks. Other information gathered for the study included a Community Adjustment Scale (Seltzer & Seltzer, 1976), an assessment of satisfaction with community living, assessments of work performance and work environments, and client records. The 65 participants all lived in the community but had been released from Massachusetts state institutions for an average period of five years. Four groups were identified:

competitive employment, sheltered employment, and sheltered but previous competitive employment, and unemployment. The majority of participants were mildly and moderately mentally retarded.

Results of the study indicated that job satisfaction varied significantly by employment status. Individuals who had experienced downward mobility (those who were unemployed or in workshops but had been competitively employed) were generally less satisfied with their current and previous jobs than individuals with stable work histories (workshops or competitively employed). Individuals who were more satisfied with their jobs were significantly more satisfied in the areas of job tasks, promotions, and relations with co-workers. Individuals who were more satisfied with their job tasks were found to be more satisfied with their leisure activities. Satisfaction with co-workers was associated with several community adjustment factors: living in more independent residences, more satisfaction with social relations, better social skills, and greater happiness. In general, the findings suggest that the most important aspects of the job are the content of the work and the interpersonal climate of the work setting.

Quality of life is an elusive yet critical concept. A number of investigators have tackled this issue by developing quality of life scales and correlating them with other measures of disabled individuals in a variety of living and work settings. In summarizing across these studies, it appears that persons engaged in more natural ("normalized") situations, e.g., independent living, competitive employment, have a higher quality of life. The role of the family as a primary support group appears to portend well for QOL and employment success. In the past, Edgerton's research (Edgerton, 1967; Edgerton and Bercovici,1976) have generally suggested the importance of advocates to success in the community. It is not clear in all cases whether the least restrictive setting led to the higher QOL or that a more capable client advanced to the more normalized setting, and thus had a higher quality of life. This correlational data base has yet to partial out the separate effects of program context from level of functioning. In summary, in spite of its elusive nature, quality of life appears to be a promising variable to measure against social support, integration status, and the general socialization process.

The Social Support Construct

In stressful times coping resources can improve disabled individuals' perceptions of their quality of life. The previous section has shown that social support is a key ingredient of quality of life. Disabled individuals may benefit from both the formal support of professionals and the informal support from family, friends, and colleagues. Good social relationships and a continuously supportive setting can signal a good environmental fit or lessen the impact or sources of stress as they occur. Many support features can affect people's perceptions of how they fit into their environment and the amount of well being that they experience from it. These features make the social support construct a multidimensional one. The construct includes assistance, instruction, material aid, information, appraisal, and advocacy. A disabled person may need some or all of these resources to varying degrees at different times in their life. The balance between need and presence of support indicates the extent to which support influences life quality and the goodness of fit between the person and the environment.

Recent literature reviews (Cohen & Wills, 1985; Payne & Jones, 1987) have examined the issue of how the construct of social support works. Since social support comes from a variety of sources, and serves many different functions, there are numerous variables to consider. Cohen and Wills explain that social support may function with main effects, showing the overall beneficial effect of continued support, or it may function as an interaction, only operating when social support buffers an individual from potentially adverse effects during times of stress. Cohen and Wills maintain that there is evidence to substantiate both of these processes, and that evidence for both types may be attributable to different methodologies and statistical techniques.

Social Support Scales for Disabled Persons

In order to adequately answer questions regarding social support, measurement instruments will have to adequately address the social support concepts under consideration. Recent literature has explored the current measurement instruments for nondisabled populations (Tardy, 1985; Barrera, 1986; Pearson, 1986; Payne & Jones, 1987). While some of these scales may be adaptable for use with cognitively disabled persons, there are several scales which specifically address the special needs of these individuals (Horner, Newton, LeBaron, Stoner, & Ferguson, 1987; Park, Tappe, Cameto & Gaylord-Ross, 1988; Reiss & Benson, 1985; Wesolowski, 1987). However, these scales have only recently been developed and they are not widely used; so practitioners may be unaware of their various characteristics.

In their review of a number of social support instruments, Payne and Jones (1987) use Tardy's (1985) conceptual framework. This framework identifies various aspects of different scales to allow comparisons across heterogeneous samples. Tardy provides definitions for the primary elements that appear in the operational frameworks of various social support scales. He notes that the various support measures address some or all of these aspects to varying degrees:

(1) Direction: Measures examine whether individuals receive support, provide support, or both.

(2) Disposition: Measures examine whether individuals have available and/or enacted support. Available support taps into one's access to support resources, while enacted support examines one's actual use of these resources.

(3) Description/Evaluation: Measures ask participants to describe and/or evaluate the quality and the type of support. Description often examines the frequency of support or the ways in which it occurs, while evaluation taps into a person's perceived satisfaction with the amount and types received or given.

(4) Content: Since social support is received in different ways, measures focus on a number of functions, e.g., advocacy, information, guidance, emotional uplift, material aid, and self-actualization.

(5) Network: Measures examine the sources of support and the composition of an individual's network. This aspect can indicate whether professionals (formal) or relatives, friends and people in the community (informal) give support.

Four different instruments are summarized in Table 2 with Tardy's guidelines. In addition to these guidelines two additional features are examined. First, the target population is included so that one can consider the specific intended group, such as mildly mentally retarded. Second, since significant others often participate with the client in completing the questionnaires, the source and amount of assistance in completing the instrument is reported as either interview style self-report, a self-read self-report, or an informant report by significant others.

Insert Table 2 about here

One of the scales in the chart, the Social Network Inventory (Wesolowski, 1987) does not purport to measure social support functions. Rather, it can be used to examine social networks. The self-report inventory has clients list the number of individuals that they know. The respondent is prompted by a list of possible role labels (e.g., mother, father, and other relatives, as well as co-worker, acquaintances, bartenders, and religious personnel). Since Wesolowski designed the inventory to examine the social networks of rehabilitation clients, the measure also has the individuals indicate whether members of their social network were employed. Wesolowski used the total number of contacts as the basic measure of the social network. It is determined by counting the number of names that the respondent lists on the inventory. Wesolowski reported a test-retest reliability coefficient of .89 with a college student sample.

In a study using the inventory, Wesolowski (1989) compared a group of 203 rehabilitation clients with a group of 71 college students. The study found an age x client status interaction. The older client group had fewer social contacts than their younger cohort, while the older student group had a greater number of social contacts. The college students had over 3 times the number of social contacts (friends) than the client group (mean number of friend contacts for the client group was 9.9, while it was 34.0 for the nonclient group). While this study nicely indicates the density of a person's social network, it does not show the functions that are served, and whether these functions can be adequately provided by a single important individual or a few critical persons.

The Reiss-Benson Social Support Scale for Mentally Retarded Adults (Reiss & Benson, 1985) attempts to measure the functions of a person's support system in addition to examining some limited aspects of its structure. In the structure section an interviewer asks the respondent to identify up to seven significant others in certain categories (i.e., spouse or partner, parents, two family members, and two friends). The function section has four questions which ask about the identified individuals. Three of the questions ask about the frequency of one's contact, sharing of feelings, and problem solving. A fourth question regards the extent to which the respondent likes the identified individual. All of the responses are scored on a 3-point scale (a lot: 3, a little: 1, not at all: 0). The point scale allows the examiner to yield both a total score and subscores for each of the four questions. The authors did not report reliability coefficients for the scale.

Reiss and Benson (1985) used this scale along with several other scales in a study of depression with 45 mildly mentally retarded adults. They found a negative correlation between depression and social support. The authors suggest that a possible explanation for this correlation may be that the depressed individuals lack the help of significant others as they face stressors such as unemployment and stigmatization. While the Reiss-Benson scale gives functional as well as structural information, it does restrict the number of individuals considered in the network to a few informal connections, and considers only a limited number of functions.

A new scale for persons with severe handicaps has recently been developed by Horner, Newton, LeBaron, Stoner, and Ferguson (1987). The Social Network Functions Form taps into both the structural and functional issues of social support. This scale accommodates persons with severe disabilities who may have difficulty in communicating clearly about complex concepts. The authors designed the assessment instrument as a research tool to measure structural, functional, and adequacy issues which relate to social support. The scale is one of two self-report instruments. The Social Networks Functions Form is meant to be used in conjunction with the Social Network Analysis Form. The latter form has the respondent list the three most important supporters for each of five different content areas: information, major life decisions, material aid, companionship, and participation. In administering this form the interviewer also asks the respondent to give their perceptions of the amount of received support on a 6-point scale (1: very little, to 6: a lot), and also to indicate the frequency of the support function. The instrument also attempts to examine reciprocal contributions to the relationship. Therefore, the interviewers ask the respondent to indicate their perceptions of the amount and frequency of support which they provide to others, using the same scales as they had used for received support. The reliability and validity of the scales have not yet been reported.

The Social Support Questionnaire (SSQ) (Park, Tappe, Cameto, and Gaylord-Ross, 1988) was developed for use with learning disabled and mildly mentally retarded individuals. Like the Social Network Functions Form, it was developed to measure and assess the current structure and functions of support for these groups in order to be used in intervention research to improve social support. This self-report instrument is intended to be administered in an interview, either in small groups with learning disabled individuals, or one-to-one with mildly mentally retarded persons.

The SSQ has been divided into three parts. The first part solicits the network structure by having the respondent list as many supporters as possible by domain (residential, school, work, and community). The second part examines the support functions provided by the three most important individuals in each domain. The third part measures the frequency that the respondent provides reciprocal support to members of the network. For the second and third parts, the interviewer asks the respondent to rate the frequency of support to specific questions in five different content areas: guidance/instruction, affective, self-actualization, crisis support, and material aid. Preliminary studies using this questionnaire are currently being completed, and reliability figures will soon be available.

It should be evident that current social support measures tend to identify available resources in a seemingly comprehensive manner. While social support examines the social environment, there needs to be further research on person-environment fits. Furthermore, a person needs to harness his coping mechanisms in order to avail himself of these resources.

Social Support Intervention

The social support network may be viewed from an ecosocial perspective (Chadsey-Rusch, 1986; Rappaport, 1977; Thurman, 1977). In ecosocial terms it is the product of two interacting factors: 1) the social and interpersonal skills of the individual, and 2) the adequacy of her opportunities to exercise those skills. The first factor refers to the social skills which are required for the individual to appropriately interact with her peers, parents, co-workers, or supervisors (McFall, 1982). The second factor refers to the receptor culture; the particular social situations where persons interact. When these interactants are more receptive to social interactions with disabled persons, it is more likely that an individual will be able to exercise her social competence. The relationship between social support, social skills, and the receptor culture is portrayed in Figure 1.

Insert Figure 1 about here

Applying an ecosocial perspective, the social support network is established when there is a congruence between the person's interpersonal skills and the readiness of the receptor culture. In other words, when the person exhibits appropriate interpersonal social skills and the interactants are receptive to the way that he exercises those social skills, a positive social network is formed. On the other hand, when there is an incongruence between the person's interpersonal skills and the readiness of the interactants, either a negative punishing social support network is formed, a non-supportive network is engendered, or no social support network is established. Social support intervention becomes necessary when this incongruence arises. Different types of interventions may be derived depending on the source of the incongruence. Three explanations can be offered for the incongruence:

1) The person does not possess adequate social skills.
2) The interactant is not ready to receive the disabled person's interactions.
3) A combination of (1) and (2).

An intervention program which focuses on the first reason would be an intervention that teaches appropriate social skills to the disabled individual. An intervention focusing on the second reason would be an intervention to change the environment (e.g., changing the attitude of the interactants). The following section reviews the literature on each of the possible types of interventions which can provide social support for disabled persons. Interventions in competitive work settings are given particular attention.

Target Behavior

Before discussing studies on social skills intervention, it is necessary to define the term "social skills." Recent research has referred to social skills as a distinct set of learned skills that are required to perform competently on social tasks (McFall, 1982). The social skills which are useful in competitive employment settings may include following instructions, asking questions, seeking help, or socializing during break. Individual social skills are important because they affect the judgement of others (e.g., co-workers or supervisors) regarding the individual's social competence. Social competence is a general evaluative term that reflects a perception and judgement by significant others regarding the adequacy of a person's social behavior. An individual with appropriate social skills is more likely to be judged as a socially competent person by others. Therefore, social skills intervention in work settings plays an important role in enhancing an individual disabled worker's social competence as judged by co-workers and supervisors. The individual's social competence can contribute to the establishment of a social support network between disabled workers and their co-workers, eventually leading to vocational success (Salzberg, Linkins, McConaughy, & Lignugaris/Kraft, 1986). There is a body of research that has examined which social behaviors are valued and devalued in work settings. Examples of valued behaviors include responding appropriately to criticism (Cheney & Foss, 1984; Greenspan & Shoultz, 1981; Jonson & Mithaug, 1987; McConaughy, Stowitschek, Salzberg, & Peatross, 1985; Mithaug, Hagmeier, & haring, 1977; Salzberg et al., 1986), interacting appropriately (Brickey, Browning, & Cambell, 1982; Foss & Peterson, 1981; Greenspan & Shoultz, 1981; Kochany & Keller, 1981), and basic communication skills (Mithaug & Hagmeier, 1978; Rusch, Schutz, & Agran, 1982). Readers who are interested in the list of these behaviors are referred to the comprehensive review by Salzberg et al. (1986).

Unfortunately, the studies identifying valued and devalued social behaviors have, for several reasons, contributed little to the identification of targeted social behaviors in social skills intervention programs. First, each study employed a different system to categorize social behaviors. This made it difficult to identify the social behaviors central to various employment settings. Second, except for the Salzberg, Agran, and Lignugaris/Kraft's study (1985), none of the research identified specific social behaviors pertinent to certain types of jobs. Third, the majority of social behavior categorizations are so broadly stated as to be unusable for effective assessment and intervention.

A literature review of the social skills intervention studies in the work setting reveals that target behaviors in social sills training were selected by investigators through their observation and according to the rationale drawn from previous related studies. Most of the interventions focused on increasing appropriate social behaviors. Two studies were concerned with decreasing inappropriate social behavior (e.g., reducing inappropriate verbalization and reducing topic repetition). Many target behaviors dealt with interpersonal relationships with co-workers and/or supervisors. However, most researchers did not socially validate these behaviors with co-workers or supervisors, except for the studies by Rusch, Weithers, Menchetti, and Schutz (1980), and Karlan and Rusch (1982), where co-workers and supervisors identified salient behaviors, and the Bates (1980) study, which employed a situational analysis.

Social Skills Training

Social skills training packages. The majority of the studies which examine the social skills training of disabled persons in work settings have used all or parts of previous social skills training (SST) packages. The packages contained the following components: rationale, modeling, behavior rehearsal or role play, and feedback. Most studies implemented these packages in natural settings (workshop or competitive employment), although there is a line of research that used these packages in analogue settings (see Table 3). For example, Bates (1980) used a social skills training package which consisted of verbal instruction, modeling, role-playing, feedback, contingent incentives, and homework in teaching four interpersonal skills (small talk, asking for help, differing with others, and handling criticism) to 16 mildly and moderately retarded adults. Shafer, Brooke, and Wehman (1985) replicated the above study in an attempt to teach three different social tasks (handling criticism, taking a joke or sarcastic remark, and soliciting assistance) to a moderately retarded individual working as a custodian in a large shopping mall. Another example of the application of a social skills training package is provided by a study by Hall, Sheldon-Wildgen, and Sherman (1980). These researchers employed instruction, modeling, role-playing, and positive, corrective feedback in order to improve the job application and interview skills of six mildly and moderately retarded adults.

Insert Table 3 about here

Breen, Haring, Pitts-Conway, and Gaylord-Ross (1985) taught social breaktime behaviors to four high school students with autism. In training, social behaviors required during a break (e.g., making coffee and chatting with co-workers) were task analyzed and were taught using a level of prompt hierarchy and contingent reinforcement, along with a massed trial method for the steps that proved difficult to learn. A multiple exemplar strategy (Horner, Sprague, & Wilcox, 1982; Stokes & Baer, 1977) was used. That is, if the disabled youth did not generalize behaviors to the co-worker after training with a given peer, training with a second (or additional) peer was introduced until generalization appeared. Generalization to natural co-workers during actual breaktimes was observed. All four participants succeeded in learning the social skill sequences and in generalizing the learned skills to three or more co-workers in the natural break setting.

Three studies added further elements to the SST. Rusch and Menchetti (1981) utilized instruction and practice, plus warning, in order to teach compliance behavior to one moderately mentally retarded male who was employed as a kitchen laborer in a university dormitory. The warning was given to the employee that if he failed to comply with the supervisors or professional kitchen laborers, he would be sent home by the shift supervisors. The results indicated that providing instructions, practice, and warning was effective in increasing compliant responses to supervisors and professional kitchen laborers. Of particular interest was the generalized treatment effect that occurred. That is, the participant began to comply with the cook's instructions, with which treatment was never associated, as well as with the other supervisors and professional kitchen laborers with whom treatment was associated. In a second study, Chadsey-Rusch, Karlan, Riva, and Rusch (1984) used a social skills training package (consisting of rationale, modeling, role-playing, and practice) plus verbal prompts (a trainer said, "It's your turn to ask me a question.") to increase the frequency of question-asking appropriate to a conversational context. Three adult males who were moderately mentally retarded and competitively employed as kitchen laborers participated in this study. Karlan and Rusch (1982) also used a combination of rationale, modeling, verbal prompt, and tokens in an attempt to investigate the relationship between acknowledgement (e.g., saying "okay" or "yes") and compliance (i.e., the worker's initiation of action in response to the supervisor's requests) of moderately retarded kitchen laborers.

A comparison of the elements of social skills training packages was made in the Gibson, Lawrence, and Nelson study (1976). Different training procedures were provided: 1) modeling, 2) instructions and feedback, and

3) modeling, instruction, and feedback. These procedures were used to teach moderately and mildly retarded adults three social responses: 1) verbalization (e.g., talking directly to peers), 2) recreation (e.g., playing cards or games), and 3) cooperation (e.g., sweeping a floor with others' help). In modeling, videotapes of non-retarded adults were employed. The most effective procedure was a combination of modeling, instruction, and feedback, followed by a combination of instruction and feedback. Modeling alone was the least effective procedure of the three.

Contingency control. In the case where SST was not used, researchers have generally attempted to increase appropriate behaviors or decrease inappropriate behaviors through contingent positive reinforcement. For example, social feedback was used in a study by Dwinell and Connis (1979) in order to reduce the inappropriate verbalizations of a moderately retarded male in a restaurant. Verbal feedback was used in the Rusch, Weithers, Menchetti, and Schutz (1980) study which investigated the effects of different agents delivering contingencies in reducing topic repetition with a moderately retarded male. The findings indicated that a combination of co-worker feedback plus experimenter feedback was most effective in reducing topic repetition. Experimenter feedback alone was the second most effective, and co-worker feedback alone was least effective.

In summary, a variety of social skills training and contingency control procedures have been found to be effective for inducing appropriate social responses in employment settings. However, none of these studies assessed the maintenance of treatment effects. Furthermore, the majority of studies either did not assess, or failed to demonstrate generalization effects across different agents, i.e., other people besides the trainer, in different natural settings. Generalization and maintenance have become critical issues in social skill research with disabled individuals (Gaylord-Ross, Stremel-Campbell, & Storey, 1986; Horner, McDonnell, & Bellamy, 1986; McFall, 1988; O'Leary & Drabman, 1971; Stokes & Baer, 1977; Salzberg et al., 1986). The ability to maintain and generalize the effect of previous training acquires great importance in the employment setting because the trainer's continued presence in the work setting is not considered to be natural, and because the person being trained is likely to encounter social situations other than those targeted by the intervention program. Recent studies have attempted to provide a solution to this problem by employing either a self-management technique or process training in social skills.

Self-management. Self-management may include a number of program components including self-recording, self-reinforcement, and self-evaluation (Browder & Shapiro, 1985). Recently, self-management has been applied to social skills training with disabled persons. Several studies have demonstrated the effectiveness of this technique in training job skills in employment settings (e.g., Rusch, Martin, Morgan, Riva, & Agran, 1985; Sowers, Rusch, Connis, & Cummings, 1980; Sowers, Verdi, Bourbeau & Sheehan, 1985). Two recent studies used self-management techniques with SST in work settings. Agran, Salzberg, and Stowitschek (1987) investigated the effects of self-instruction to enhance the generalization and maintenance of social behaviors of one behaviorally handicapped and four moderately retarded workers in a sheltered workshop. The training encouraged the workers to initiate interaction with the supervisor when they ran out of work materials or when they needed assistance. The results indicated that the training package led to the generalization of employees' responses across different settings, and maintained up to 13 weeks. However, it is difficult to attribute the intervention effect to the self-instruction procedure because the effects of a single component, i.e., self-instruction were not investigated in the study. Since the participants did not overtly emit the self-instructions in either the training or generalization settings, we must be cautious in imputing causality to this variable.

Another example of the use of the self-management technique is demonstrated in a study by Wheeler, Bates, and Marshall (1988). They taught one moderately mentally retarded worker (working in a university vivarium) how to self-record his inappropriate social behaviors (not shaving, not following instructions, excessive belching, discussing drinking, and pouting). The results indicated that the self-recording procedure, in conjunction with immediate feedback, improved all five behaviors, and maintained the improvement successfully over a 38 week period. The study shares the same problem as the Agran et al. (1987) study. The effects of self-recording cannot be singled out. Therefore, the improvement of social behaviors cannot be solely attributed to self-recording.

Finally, Storey and Gaylord-Ross (1987) examined the rate of positive and negative verbal behaviors of a group of mentally retarded and learning disabled youth while on breaks at a community work training site. A combined SST package included instructions, modeling, rehearsal, reinforcement, and self-monitoring. Initially, the rate of positive behaviors was increased and negative behaviors decreased with the combined package. Next, the different elements of the package were discontinued in a sequential fashion. Self-monitoring was the last element remaining, and it proved capable of maintaining positive social responding. A reversal design showed that the behaviors did not maintain without self-monitoring. Thus, for the first time in employment settings, self-monitoring was shown to be singularly causal in maintaining social behaviors.

Process training. Another way to promote the generalization of learned skills is to teach the generative process of social behavior rather than specific component behaviors (Trower, 1984). To our knowledge, the studies dealing with social skills intervention in employment settings have only taught specific behaviors. Trower (1984) points out that the major limitation of teaching specific molecular behaviors is that such training will not lead to a clinically significant change (e.g., maintenance and generalization of social skills). In an attempt to apply a process model to social skills training, Park and Gaylord-Ross (1989) taught four disabled students a reasoning process that included decoding a situation, generating alternative responses, selecting and performing a best-fit response, and evaluating the response (e.g., why and how to greet a person in a work place). They demonstrated the effectiveness of teaching a reasoning process in vocational contexts in order to produce generalizations to different settings. In a second study they also compared a behavioral component model with a process model. The results showed that the process model was more effective than the component model in producing generalization. This study holds great promise for future social skills intervention in other work settings.

Table 3 summarizes a number of SST studies in employment settings. It can be seen that a small but efficacious data base is emerging in this field. Yet one limitation of SST is that trained individuals often fail to generalize and maintain learned social skills. The use of self-management and the teaching of reasoning appear to hold promise in obtaining these goals.

Co-Worker Intervention

The studies reviewed thus far have concentrated on modifying the disabled person's social skills. A second type of procedure to promote social support is an intervention focusing on co-workers. Placing a disabled individual in a competitive work environment with non-disabled co-workers may not necessarily lead to a social relationship. A systematic program to guide non-disabled persons in developing a positive interpersonal relationship with disabled persons may be required (Bricker, 1978; Donaldson, 1980; McHale & Simeonsson, 1980; Salend & Moe, 1982; Stainback & Stainback, 1980; Voeltz, 1980, 1982). Examples of co-worker intervention may include modifying their attitudes, helping them to develop friendships with disabled workers, and helping them to interact effectively with disabled workers. This type of intervention with non-disabled persons has already been successfully implemented in a school environment with programs like "special friends" (Voeltz, 1980, 1981). The co-worker intervention could be particularly effective for some disabled workers who do not have sufficiently extensive social repertoires to initiate and sustain social interaction with others. However, none of the studies on improving social relationships with co-workers has designed a co-worker intervention. Rather, the social skills of a disabled worker were targeted for modification. The co-worker's role in job-training potential has been demonstrated in a few studies. White (1986) summarizes a number of co-worker roles which provide social validation to the intervention program by: providing normative data by which to compare non-disabled workers' performance with the disabled workers' (e.g., Breen et al., 1985; Crouch, Rusch, & Karlan, 1985; Karlan & Rusch, 1982; Rusch, Martin, & White, 1985), offering a subjective opinion in assessing social-vocational competence (e.g., Rusch et al., 1980), identifying target behaviors (Rusch et al., 1980), developing treatment programs or techniques (Rusch, Morgan, Martin, Riva, & Agran, 1985; Schutz, Rusch, & Lamson, 1979), and evaluating the effectiveness of the program (Rusch et al., 1980). Shafer (1986) enumerated intervention roles of the co-worker as: being an advocate, observing and reporting the occurrence of target behaviors, and being a trainer.

Recognizing the potential roles for the co-worker, Salzberg (1988) recently developed a co-worker training manual for job skills. However, there has been no reported co-worker training for social support between non-disabled co-workers and disabled workers. Training co-workers becomes especially important when those co-workers do not possess adequate skills to interact with disabled workers (Shafer, 1986; Rusch et al., 1980). Yet, certain issues may arise when one includes co-workers and/or supervisors in the social support intervention for disabled workers. Should the intervention be a tutorially-oriented program in which a non-disabled worker plays a teaching role with a disabled person? Voeltz (1982) contends that interaction on an instructional basis may not successfully promote friendships. Yet, in an evaluation of peer tutoring and special friends programs, Haring et al. (1987) found few differences between the interactional styles of nondisabled youth who participated in a special friends and peer tutoring program. It is likely that a supportive co-worker will have a diagonal role rather than a clearly vertical or horizontal role (Salzberg, 1988). That is, there may be some aspects of the relationship involving instruction which have a "vertical" flavor. Social/leisure interactions in or out of the workplace should have more of a "horizontal" orientation. This diagonal, supportive role is consistent with Edgerton's (1967) characterization of the benefactor.

Combination of Social Skills Training With Co-worker Intervention

A third type of social support intervention would be interventions which focus both on the individuals' social skills and on the co-worker. This sort of intervention may be necessary when a disabled person does not possess adequate social skills and when co-workers are not receptive to the disabled person's approaches. The need for this type of intervention is indicated in the Breen et al. (1985) study. The disabled participants initiated social interaction with non-disabled co-workers after social skills training. However, natural co-workers tended not to reciprocally extend the interaction. The authors drew the inference that it might be necessary to modify the receptor culture (in this case, train the natural co-workers), as well as to modify the behavior of the disabled persons, so that a greater proportion of extended social exchanges between the disabled and the non-disabled persons would occur. Possibly, training with both potential interactants should occur. For example, Stanford and Wehman (1980) employed verbal prompts and reinforcers to increase the level of social interactions between two moderately retarded employees and their non-disabled co-workers during their lunch breaks. In addition, they coached the non-disabled co-workers to be receptive to the mentally retarded employees. The study results showed a marked increase in the participants' social interaction with their co-workers. Although they did not investigate the treatment's effectiveness in terms of social support, this combination of social skills intervention with co-workers intervention may have improved the social support between the two parties.

Conclusion

Social support may be enhanced with two types of interventions. The first type of intervention is social skills training. The SST studies in work settings have shown significant, yet limited effects. While social behaviors have been trained, substantive generalization across settings and time (maintenance) has rarely been tested or demonstrated. Self-management techniques and process training are promising alternatives which might enhance the generalization and maintenance of social skills. The second type of social support intervention, co-worker involvement, has been minimally explored, even though the importance of co-worker roles has been stressed in the literature. The third social support intervention, which combines social skills training and co-worker intervention has hardly been addressed. Future research on social support should certainly investigate the relative contributory components of co-worker involvement and SST.

Toward a Theory of Ecosocial Development

Our review has hopefully shown the importance and advances in the constructs and related interventions of social support and quality of life. Certainly there exists a need to develop more powerful interventions to enhance the social integration of disabled individuals. Still, it would be desirable to advance a theory of socialization which places these constructs into a larger perspective than just one which assesses the needs and designs of interventions. Special education has been criticized as a field which is derivative in its research methodology, and one that has failed to evolve its own theory or conceptual model. It appears that the topic of mainstreaming or integration is a recurring one with recurring new forms (e.g., the Regular Education Initiative.) While there certainly have been advances in socially integrating disabled individuals, it would be useful and elegant to advance a theoretical model which explains the socialization process and references integration accomplishments and needs.

Ecology

Most work on socialization has been individually focused. The term psychosocial has addressed social development, but more from an intrapsychic perspective. In turn, social skills has examined the social interaction capabilities of the individual. Certainly, sociometry has been used as an outcome measure of acceptance and integration (Odon & McConnell, 1986). Yet, only recently has the social network been examined more extensively as a primary agent of interaction and support.

The attention given to ecology has emerged in the social sciences in general (Moos, 1975). In our field, the notion of ecological or ecobehavioral science has emphasized the consideration of social organizational factors in conjunction with educational interventions (Chadsey-Rusch & Rusch, 1988; Kaufman, Agard, & Semmel, 1985; Warren & Rogers-Warren, 1973). It is felt, though, that the term *ecosocial* more directly keys the socialization process to the surrounding social context.

Ecosocial Configuration

The ecosocial model has four levels of social processes. The *cognitive-social* level addresses inner individual variables, which were outlined in our reference to process SST. Figure 2 presents our ecosocial schematic. It shows the cognitive-social level, with its decoding, decision, performance, and evaluative parts.

Insert Figure 2 about here

Another level is the *interactional* one. Certainly, the majority of social skills interventions have addressed this domain. An array of measurement indicators, e.g., frequency, duration have been used to analyze the interactional patterns of behavior.

The third ecosocial level addresses the roles and *relationships* in a person's life. A social network of friends and support persons may be constructed in the different domains of work, school, residential, and community (Park et al., 1988). Furthermore, relationship variables may indicate the types of support and contact the individual may have. A figurative ecological network may represent one part of a person's social reality.

The final macro-level of ecosocial analysis addresses organizational, political, and economic variables. Individuals comingling in a variety of relationships are influenced by the broader contextual variables. Except for policy analysis, relatively little attention is given to most macro variables. Certainly the site of work or school in terms of sheltered or regular placements has been addressed. Our review of integration and quality of life studies reflected the importance of macro variables. In addition, the political and organizational climate of a setting may have powerful effects on the morale and motivation of teachers and students, caregivers and clients, supervisors and employees. Economic factors also affect the individual's self-concept and social life. The label of poverty and disability (and ethnicity) can debilitate an individual psychologically, so that he becomes socially ineffectual.

Figure 2 portrays the different levels of social life. Although they are listed at levels, it must be remembered that they all simultaneously interplay at a given social moment. For example, at the time a disabled student converses with a peer one may ecosocially evaluate the situation in terms of:

1. The disabled individual cognitively figures out what the person is saying and decides what to say next.
2. The person emits certain conversational and nonverbal behaviors as he takes turns with another during conversation.
3. The interactant with the disabled student has a particular role, e.g., a new friend. The peer provides instructional support in a class and is now exchanging intimacy (emotional support) at school and community settings.

4. The conversational exchange occurs at an upper-middle class school (90% Caucasian) in the suburbs. The school atmosphere is comfortable with little ethnic, criminal, or economic disharmony in the community.

Such an ecosocial analysis, we feel, provides a comprehensive portrayal of the individual's social life. A high quality of social life may be assessed at different levels and domains. Social needs may be determined and programmatic interventions individually designed to fit different contexts.

Ecosocial Intervention

Given that special education is a field which advances educational programs and interventions, it is critical to relate the individual's ecosocial life to individualized programs which remediate particular social needs. Figure 2 displays a number of interventions which have advanced the social life of disabled individuals. A set of interactions is matched with a particular level of social reality. The largest amount of empirical work has been with behavioral social skills training. Recently, there has been considerable interest in relationship formation and interventions, like special friends and peer tutoring (Haring et al., 1987). Since the latter part of the twentieth century in the United States could be characterized as one with much integrative activity, there is a recurring interest in macro interventions. Initial outcome studies indicate differential (not singular) effects showing that integrated school, and community, and work experiences improve quality of life. Certainly we have only scratched the surface in these types of investigations. Finally, cognitive behavioral interventions appear to hold much promise for the socialization of disabled individuals. Not only do they provide a means for promoting robust generalization effects, but they also magnify the control an individual may assume over his environment.

The educational practitioner and researcher should benefit from an understanding the ecosocial world of disabled individuals. The model is likely to be further developed with continued empirical and theoretical efforts. Hopefully, the number and power of ecosocial interventions will expand in future years.

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Table I (continued)

Heal & Chadsey-Rusch (1985)	n=38 MR 1. ICFDD + 22-72 2. Apartment dwellers 47-97, average age 31	Client interview	50 item RSS adapted to Lifestyle Satisfaction Scale (LLS) 29 item	Parallel items Statistical correction and acquiescence sub-scale.	Satisfaction with residence, friends, community setting, community services & free-time utilization. Satisfaction or happiness associated with having: friends, family, enjoyable things to do.	Higher QOL for apartment dwellers. More satisfaction with community, family, general lifestyle. No difference with friends, services, job, acquienscence.
Shalock & Lilley (1986)	n=85 MR 40-91 Average age 30 Had minimum of 2 years independent living in ILS program	Review of records. Staff reports Client interview	QOL Questionnaire (Schalock & Keith, 1984) Basic Skill Screening Test (Schalock, Ross & Ross, 1976)	3 pt. scale based on behavior descriptions that can be easily observed.	Degree of environmental control, social interactions, community utilization.	Highest QOL for clients who continue to live indepedently and work to support self for 8-10 years. Success in I.L./work correlates highest with family involvement, also social-emotional skills and others.
Hill, Rotegard, Bruininks (1984) Data collected 1978-1979	n=2271 1. 1306 residents of state institution 2. 965 residents of community resident facility	Interview of direct care staff	Interview Questionnaire Behavior Character Assess 65 item	N/A	Looked at family, social (friends/ companions) & leisure activities of residents.	Community residence facility residents had greater degree of family & social contacts & leisure activities

TABLE 1.

Selected Studies Addressing Quality of Life

STUDY	PARTICIPATION	METHOD	INSTRUMENTS	CONTROL OF ACQUIESCENCE BIAS	QOL DEFINITION	RESULTS
Seltzer (1984)	n=65 All previous state institutions 1. Competetively employed 2. Unemployed but previously competetively employed 3. Sheltered employment 4. Sheltered employment but previously competetively employed	1. Structured client interviews 2. Review records 3. Work performance and work environment by supervisor	JDI (Seltezer, 1984) Community Adjustment Scale (Seltzer + Seltzer, 1976)	JDI Equal number of favorable and non-favorable items	Not defined	For stable & upwardly mobile individuals, greater satisfaction with job task, co-worker promotion. For all employed individuals, greater satisfaction with supervisor. RE; pay, no significant difference. Job satisfaction was realted to characteristics of work environment, job preformance, and overall community adjustment.
Inge, Banks, Shafer (1988)	n=40 Matched on sex, age, physical/sensory involvement, parental support, functioning level, behavior, work skills. 1. In S.E. for 6 month minimum. No previous work history 2. In sheltered workshop.	5 measures of physical health by O.T. Telephone interview with parent/guardian. Staff completion of ABS	AAMD, ABS (Nihra, Foster, Shellhaas & Leland, 1974) Parent/Guardian Survey	N/A	Improved community integration and acceptance	ABS subscales exp. subjects increased in economic activity, language development, numbers and time. Parent/Guardian Survey Subscales experimental subjects increased in: community participation, social/vocational, fiscal responsibility, financial activity, income.

TABLE 3

Summary of Social Skills Interventions for the Persons with Disabilities in Work Settings

AUTHORS	SUBJECT(S)	TARGET BEHAVIORS	SETTING	INTERVENTION	AGENT	TREATMENT EFFECTS	GENERALIZATION	SOCIAL VALIDATION	MAINTENANCE
Agran, Salzberg & Stowitschek (1987)	4 moderately/ severely disabled and 1 severely behaviorally handicapped sheltered workshop employees	Initiations with supervisors	Sheltered Workshop*	SSTP* plus self-nstruction	Trainer	Yes	Yes	Yes	Yes
Bates (1980)	16 moderately retarded adults	Small talk, asking for help, differing with others & handling criticism	Analogue setting	SSTP	Experimenter	Yes	Not occurred	No	Not measured
Breen, Haring, Pitts-Conway, & Gaylord-Ross (1984)	4 autistic high school students	Social interaction	Restaurant	Task analysis, multiple exemplar strategy	Co-workers	Yes	Yes (to natural co-workers)	No	Not measured
Chadsey-Rusch, Karlan, Riva, & Rush (1985)	3 moderatley retarded kitchen laborers	Question-asking	Analogue	SSTP	Trainer	Yes	Not measured	Yes	Not measured

TABLE 2.

Summary of Social Support Measures for Disabled Groups

SCALE	TARGET POPULATION	SOURCE	DIRECTION	DISPOSITION	DESCRITION/ EVALUATION	CONTENT	NETWORK
Reiss-Peterson Social Support Scale (Reiss & Benson, 1985)	Mildly Mentally Retarded	Interview/ Self-Report	Received	Enacted	Described	Multiple	7 Significant Others
Social Network Inventory (Wesolowski, 1987)	Rehabilitation Clients	Self-Report	Received	Available	Not Measured	Not Measured	All Possible Supporters
Social Network Functions Form (Horner et al., 1987)	Severely Handicapped	Interview/ Self-Report	Received/ Provided	Enacted	Described/ Evaluated	Multiple	3 Most Important Listed by Function
Social Support Questionnaire (Park et al., 1988)	Learning Disabled and Mildly Mentally Retarded	Interview/ Self-Report	Received/ Provided	Enacted	Described/ Evaluated	Multiple	Supporters Listed by Domain

Table 3 (continued)

Rusch & Menchetti (1981)	1 moderately retarded kitchen laborer	Following instructions	Kitchen	SSTP	Co-worker & supervisor	Yes	Yes (to a non-treated group)	Yes	Not measured
Shafer, Brooke, & Wehman (1985)	1 moderately retarded custodian	Handling criticism, soliciting assistance	Analogue setting	SSTP	Experimenter	Yes	Partially occurred (in a natural setting)	Yes	Not measured
Stanford & Wehman (1980)	2 moderately retarded adults	Socialization	Dining hall	Verbal prompt and feed-back**	Experimentor	Yes	Not measured	No	Not measured
Wheeler, Bates, & Marshall (1988)	1 moderately retarded male	Not shaving, not following instructions, excessive belching, discussing drinking, pouting & appropriate social initiation.	University vivarium	Self-rewarding and feed-back	Trainer	Yes	Yes	Yes	Yes

*** Coaching non-disabled co-workers to be receptive.*

** This particular study is included here because of its importance of using a self-instruction technique even though it was conducted in a sheltered workshop*

SSTP` Social Skills Training Package

Table 3 (continued)

Dwinell & Connis (1979)	1 moderately retarded male	Reducing inappropriate private verbalization	Restaurant	Social feed-back	Experimenter	Yes	Not measured	No	Yes (for 4 weeks)
Gibson, Lawrence, & Nelson (1976)	3 mildly & moderately retarded adults	Verbalization, recreation & cooperation	Residential setting	SSTP	Experimenter	Yes	Not measured	No	Not measured
Hall, Sheldon-Wildgen, & Sherman (1980)	6 mildly & moderately retarded adults	Job application & interview skills	Analogue setting	SSTP	Experimenter	Yes	Not measured (in natural setting) Yes (to untrained situation)	No	Not measured
Karlan & Rusch (1982)	2 moderately retarded kitchen laborers	Acknowledgement & compliance	Kitchen	SSTP	Experimenter	Yes	Not measured	No	Not measured
Park & Gaylord-Ross (1988)	4 moderatley/ mildly retarded students	Initiation, expansion, termination, greeting, making polite statements, complaining and mumbling.	Restaurant, hospital, beauty salon & school	Process training	Experimenter	Yes	Yes	Yes	Yes
Rusch, Weithers, Menchetti, & Schultz (1980)	1 moderately retarded kitchen laborer	Reducing topic repetition	Dining hall	Verbal feed-back	Co-worker, experimenter, & supervisor	Yes	Not measured	Yes	Not measured

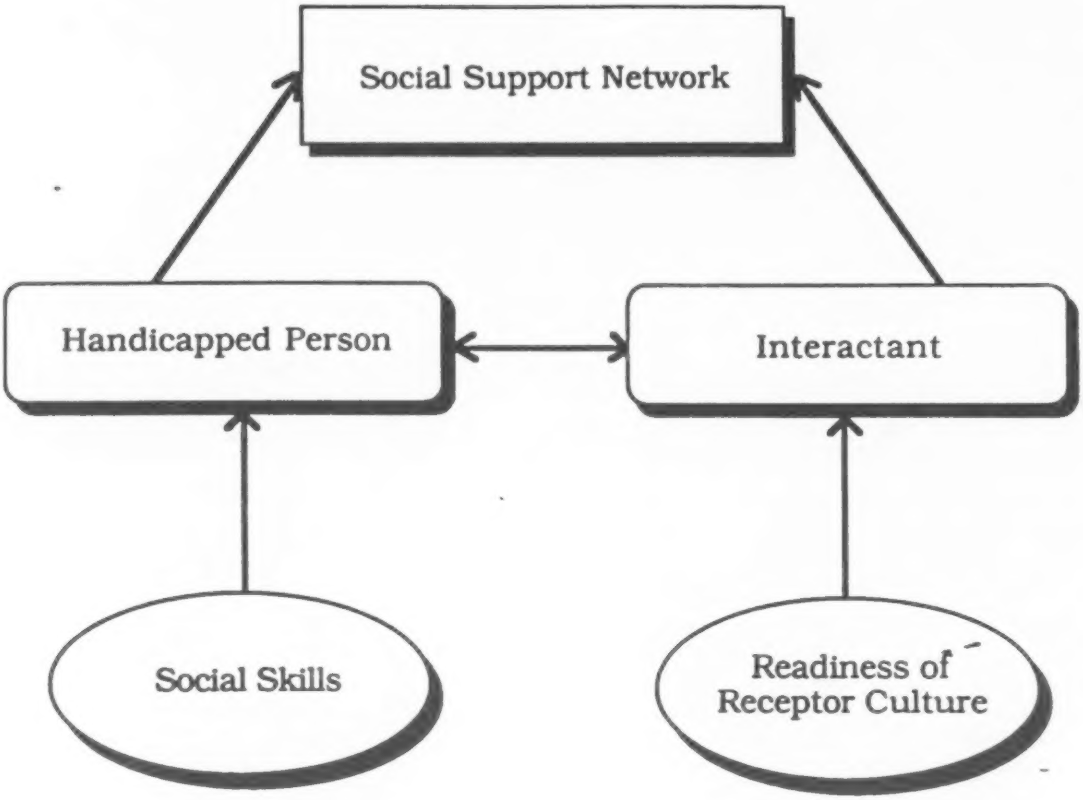
FIGURE CAPTIONS

Figure 1. The social support network.

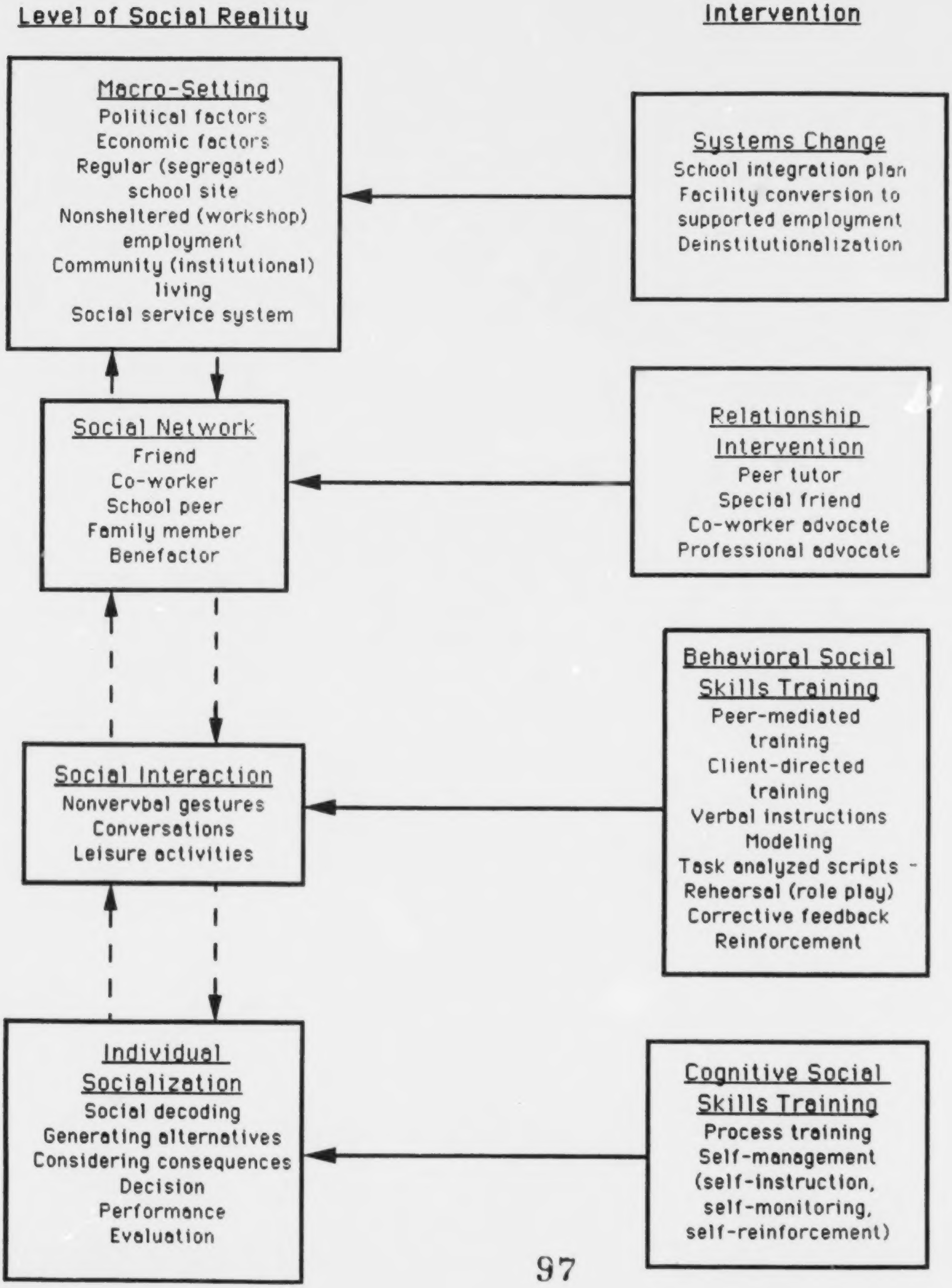
Figure 2. The ecosocial system.

Figure 1

Formation of Social Support Network Between a Disabled Person and a Interactant


Social Support Network
Handicapped Person
Interactant
Social Skills
Readiness of Receptor Culture

The Ecosocial System


Level of Social Reality
Intervention
Macro-Setting
Political factors
Economic factors
Regular (segregated) school site
Nonsheltered (workshop) employment
Community (institutional) living
Social service system
Systems Change
School integration plan
Facility conversion to supported employment
Deinstitutionalization
Social Network
Friend
Co-worker
School peer
Family member
Benefactor
Relationship Intervention
Peer tutor
Special friend
Co-worker advocate
Professional advocate
Social Interaction
Nonvervbal gestures
Conversations
Leisure activities
Behavioral Social Skills Training
Peer-mediated training
Client-directed training
Verbal instructions
Modeling
Task analyzed scripts
Rehearsal (role play)
Corrective feedback
Reinforcement
Individual Socialization
Social decoding
Generating alternatives
Considering consequences
Decision
Performance
Evaluation
Cognitive Social Skills Training
Process training
Self-management
(self-instruction,
self-monitoring,
self-reinforcement)

Social Support and Transitional Coping*

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Abstract

This paper examines social support in the form of coping assistance as a way for developmentally disabled adults to face the transitional stressors of moving from a sheltered or home environment into a more independent community setting. In examining the theoretical base for social support and coping assistance this paper makes several assertions. First, that social support is better conceptualized as a dynamic interactive resource exchange than as a static feature of the environment. Second, that a cognitive-behavioral view of the construct is better than a behavioral view because it allows us to address more variables. Finally, social support can be reconceptualized as coping assistance which focuses on situation- or reaction-based stressors rather than on perceptions of self-efficacy. The paper also examines support networks and facilitators, and the use of support with developmentally disabled populations. In the final pages aspects of the various theories and models are translated into a proposed counseling intervention.

Social Support and Transitional Coping: Adjustment in Community Settings for Developmentally Disabled Adults

Developmentally disabled adults face stressful life events as they make the transition from institutions or secondary school settings to community settings. Social support may offer assistance, guidance, or the concern of others as a means to increase an ecological match between a person and an environment. The life changes of the developmentally disabled may in many ways mirror the life changes of other young adults who make the transition from home life to independent living. Both groups cope with stressors such as separation from their families, acquiring the financial means to make it on their own, and locating appropriate housing. However, for the developmentally disabled the transition process may be even more difficult.

In 1988 SRI International conducted a survey with over 8000 special education students who had left high school. The results indicated that while 50% of regular education students lived independent of their parents, only 17% of special education students did. The study also found that among special education students only 29% found full-time work, and that 17% of the former students were still in part-time work after a year out of school. Halpern (1985) has shown that personal, functional living, social, and recreational skills limit the independence and lifestyles of handicapped adults in both home and community environments.

The Office of Special Education and Rehabilitative Services (Will, 1984) has made the transition of special education graduates a top priority. Social support and coping assistance may be one way to help facilitate this transition and promote successful community adjustment. Mere access to more normalized settings does not guarantee adjustment, adaptation, or integration. According to Bercovici (1981) many mentally retarded individuals who had been deinstitutionalized did not perceive themselves as living in the normal community. Instead, they belong to a physically segregated and culturally different social system. These individuals were not adjusted or accepted within their larger community or environment.

Introducing an individual into a physical community setting does not necessarily guarantee that the setting will possess the spirit of gemeinschaft (community of belonging with mutual participation). O'Connor (1983) cautions that the word "community" is not synonymous with the word "noninstitution." The disabled should be more than just in a community setting, they should also be part of the community and able to function in a well-adapted manner as community members. O'Connor also believes that social support may serve as an important means for adaptive functioning and socialization of deinstitutionalized mentally retarded persons in community settings.

Some developmentally disabled individuals who manage to find and utilize socially supportive relationships, find that these relationships can contribute to the successful adjustment in both community and work settings. Edgerton's (1967) study of mentally retarded people who entered community settings from institutions showed that many of them needed help in passing as competent. They wanted to deny the reality of their retarded condition and maintain their self-esteem. However, most of these individuals could not cope within the community alone, and their greatest concern was with social acceptance. With few exceptions the former patients located benefactors to help them with their denials of incompetence and to aid them as problems arose.

However, the need for a benefactor relationship may not last. In a follow-up study Edgerton and Bercovici (1976) noted that over half of the retarded individuals had decreased their reliance on benefactors. The longer these people lived in the community, the more they became integrated in social activities. Therefore, the need for social support may be more important during times of initial transition into independent community settings.

The stress of transition and social change has become a central theme for developmental psychologists examining normal populations (Sheehy, 1976; Levinson, 1978). Studies using the transitional stress theme offer descriptions or explanations of aspects of social change. However, it may also be useful to look at the specific stressors involved with transition in order to develop the appropriate means to cope, adapt behavior, and encourage adjustment. While developmental approaches may recognize transitions as times of major psychological transformations, a behavior therapy perspective may give some light to approaches for successful coping with the transformation process.

Using a behavioral therapy approach we can examine more that just the transformation traits. We can also examine the interplay between the person and the social system and attempt to identify ways that the stressors found within this interplay can be eliminated or reduced. Supportive individuals from within the social environment offer a potential means to facilitate the successful adjustment and integration of the developmentally disabled in school, work, and community settings. Socially supportive relationships may help foster the abilities and skills needed to live competently by promoting the person's capacity to interact effectively with the environment (Maluccio, 1981). From a behavior therapy approach, working with the interactions of the environment, the person, and the behavior may be one means to enhance the adjustment outcomes for developmentally disabled individuals.

Perspectives and Support Functions

For several decades the fields of health and community mental health have given considerable emphasis to social support. Researchers in this field have viewed social support as an environmental feature to alleviate stress and prevent physical illness (Cobb, 1976; Gottlieb, 1983; Cassel, 1976). According to Pearson (1986) the universal conclusion of these and other studies examining social support is that it has been a key situational moderator of psychosocial stressors. She also states that studies have shown that social support contributes greatly to emotional adjustment and well being. More recently those involved with the field of mental retardation have viewed social support as a means to facilitate community adjustment and reduce the concomitant stress of transition (O'Connor, 1983; Schilling & Schinke, 1983; Karan & Knight, 1986).

The background and goals of various researchers helps to determine their views about the functions and operations of social support. Most researchers agree that social support is a multi-dimensional concept (Barrera, 1986; Lazarus & Folkman, 1984; Pearson, 1986). However, according to Lazarus and Folkman (1984) two perspectives predominate in the social support literature. In the one view the social system shapes an individual's perceptions and role identity. In another view the social system shapes the individual, but the individual also affects the environment through coping. In this second view stress arises when there is a social structure, and coping is a means for resolving these conflicts.

Weiss (1974) and Cassel (1976) view social support functions from the first perspective. Weiss' list of six support functions includes; social integration, attachment, opportunity for nurturance, reassurance of one's worth, a sense of reliable alliance, and obtaining guidance. All of these functions contribute to people's emotional interpretations of their roles in relationship and within society.

Cassel (1976) stressed the informational aspects of social support. He maintained that appraisal opportunities, normative fit, and group solidarity contribute to people's perceptions of their roles. He has suggested that social support works through feedback which helps maintain social identity and therefore integration in society. Both Weiss and Cassel are operating from the perspective of the effects of society on its substructures. They both see social support as an environmental feature.

However, other authors have conceptualized social support as a resource which can affect the environment as well (Barrera, 1983; Lazarus & Folkman, 1984). These authors focus more on the individual and personal exchange than on social roles. Barrera conceptualized social support from the basis of behavioral transactions and personal need. Barrera derived six categories to describe the support functions from authors of a variety of backgrounds. His list includes functions derived from both feature-oriented authors (including Weiss and Cassel), as well as functions which are more actively-oriented toward change. These functions include: material aid, behavioral assistance, intimate interactions, guidance, feedback, and positive social interaction.

In trying to create a rational typology that included different aspects of the literature, Barrera included support functions that may serve as a means of relaying social standards (e.g., feedback as role appraisal and reassurance of worth). However, this perspective also examines functions relative to the behavior exchanges of a focal person (e.g., behavioral assistance, and guidance as problem solving). In his empirical examination of the six categories (Barrera & Ainlay, 1983) he concluded that directive guidance, nondirective support, positive social interaction, and tangible assistance could best describe social support as behavioral transactions. This more dynamic view acknowledges that the social environment is in a state of flux, and that support functions can be cultivated and used to change the individual as well as the environment.

This latter, more individualized approach offers positive prospects for intervention since it offers a changing and malleable view of social support. Lazarus and Folkman (1984) call environmental interaction and change a social resource perspective. They perceive social support as a resource in which aware individuals can proactively use social support to met social stresses and demands. This perspective differs from a feature stance. In a feature stance social support can be either functional or dysfunctional depending on the presence or absence of various features in the environment. However, according to Lazarus and Folkman's social resource perspective, the social relationship and changing environment may be a source of stress, but can also offer valuable personal resources. These resources can be utilized *if* the individual recognizes the social demands and effectively uses the resource.

In an ever-changing environment the many dimensions of social support may offer different means for increasing the goodness of fit between the individual and the ecological source of stress. Many support features affect people's perceptions of how they fit into their environment and the amount of well being that they experience in it. Singly and collectively they offer a viable means for changing the environment. As developmentally disabled youth adults transition into community settings they will need to develop the skills which can tap into the various functions of support which will be needed to guarantee adjustment.

Social Support and Adaptive Responses

Adaptive Mechanisms: The Situation and the Self

Whether we view social support as a feature of the environment or a resource within it has direct implications for interventions which relate to it. Three variables contribute to adaptive behavior: the person (P), the environment (E), and the behavior (B). These variables have been arranged in different ways to explain behavior change. In the perspective of strict behavioral psychology the environment and its features serve as the instrumental means of changing behavior. However, from a cognitive-behavioral view the person has a more active role in changing behaviors.

Bandura (1978) has depicted the behavioral perspective as a unidirectional approach represented by the following paradigm: B:f(PE). Bandura agrees with this paradigm, because in it behavior is a function of the person reacting to rewards and consequences within the environment. The paradigm has no regard for psychosocial phenomena at the level of intrapersonal development, interpersonal transactions, and interactive functioning of organizational and social systems. The behavioral perspective does not take the cognitive capacities of the individual into account (Skinner, 1971). Behaviorists believe that society's rules and laws are maintained solely by contingencies, or environmental features.

In Skinner's view perceptual response and thought keep people in touch with the world around them, but have no role in explaining the cause of behavior. Social support interventions which represent this paradigm are those which stress solely the environment. Changing environment stimuli and consequences are the only route to changing behavior.

In contrast to the behavioral view, the cognitive-behavioral view sees the person as a participant in behavior change. Bandura (1977a) views the generation of behaviors in a reciprocal manner, in which behavior, personal factors, and environmental factors all contribute to each other in an interlocking fashion: B P E . In this paradigm no component has mastery over the others and behavior results from the relationship of the three. This paradigm does not deny the effects of learning and conditioning on behavior, but it allows for the emotional dispositions and the expressed behavior of an individual to interact with the environment. According to Bandura the personal factors are cognitive structures that mediate behavior, not a psychic agent which controls behavior.

He maintains that the self-generated influences cannot be excised from among the determinants of human behavior. To do so would sacrifice considerable explanatory and predictive power, because beliefs can differ from actuality. One's interpretation of one's social relationships and environment influence the evaluation of experiences and the regulation of future behavior based on cognitive mediation. While we are not entirely free agents in this view, we are not devoid of perceptions and emotions which can be changed through either behavior influences or cognitive influences.

A cognitive-behavioral stance offers more options for working toward behavioral change. One can change the features of the environment or an individual's perceptions of the environment in order to bring about changes in behaviors. From a cognitive-behavioral perspective social support interventions can address either the environment or the reactions of the individuals to the environment. The individual is not merely a recipient of environmental influences, but also may to some extent use resources to modify the environment.

Using the Mechanisms: The Situation, the Self, and Stress

Social support has been linked with coping assistance in times of stress among nondisabled populations (Pearlin, Lieberman, Menaghan, and Mullan, 1981; Hirsch, 1980; Lazarus & Folkman, 1984; Pearson, 1986). Within mildly mentally retarded groups social support has also been linked to coping and stress (Reiss & Benson, 1985). Reiss and Benson found negative correlation (ranging between -.25 and -.76) between depression and social support, and suggest that a possible explanation for these correlations may be that the depressed individuals lack the help of significant others as they face stressors such as unemployment and stigmatization. They state that these individuals may not cope as well as those who have more support in solving problems and achieving goals.

Thoits (1986) has also examined social support as a way to address stress. In her attempts to clarify the stress/support relationship, she advocates reconceptualizing social support as one type of coping assistance. She proposes integrating coping processes and support processes within a more general theory of stress-buffering, which purports that social support reduces, or buffers, the adverse psychological impacts of stressful events (Cohen & Wills, 1985).

In Thoits' reconceptualization, stressors refer to negative life events and chronic life strains which require substantial behavioral readjustments. Coping can refer to attempts to enhance the fit between the person and the environment and serves to meet environmental demands and prevent negative consequences. Thoits preferred definition of coping follows that of Lazarus and Folkman (1984) who define coping as "constantly changing cognitive and behavioral efforts to meet external and/or internal demands that are appraised as taxing or exceeding the resources of the person."

Thoits believes that stress-management methods that individuals use can also be employed by people supportive to the individual in order to better the match between the person and the environment. Thoits, who based much of her work on Lazarus and Folkman's conceptualization of stress and coping, has suggested two sources of stress: a situation which may threaten survival or a loss of self regard, and also the self's emotional reactions to that situation. In turn she suggests two ways to alter behavior in response to the stressors: behaviorally and cognitively. A two-by-two matrix based on Thoits' view of the stress buffering process appears in Figure 1.

Insert Figure 1 About Here

The top left corner of the matrix shows that behavioral problem-focused coping addresses the situation through active change or avoidance. An example of this among developmentally disabled adults would be if a supportive individuals actively helped someone who lived in a high crime area to install locks and take other protective measures. If possible this same individual might decide to help the person locate an apartment in an area that had less crime.

The lower left corner of the matrix shows that another effective mechanism might be cognitive problem-focused coping which would involve reinterpreting a situation. Thoits states that this method is particularly helpful in cases of bereavement or permanent injury when a person may not have the resources to alter the situation. For the developmentally disabled this might mean having a significant other help minimize the importance of accomplishing a task too difficult for the disabled person to perform, such as assembling a VCR of their own.

The next category represented in the upper right corner of the matrix involves behavioral ways to alter the physical sensations associated with emotions. This could involve things such as the supportive person engaging the disabled individuals in physical exercise to move the individual's focus away from a problem, or providing an outlet for the disabled individual to vent anger.

The final corner of the matrix, the lower right corner, involves cognitively reinterpreting an emotion. This reinterpreting should no be construed as being synonymous with a distorting reappraisal of an emotion. Rather it can involve positive comparisons or finding value in a negative reaction. An example of this would be when a supportive individual guides a disabled person to compare a certain negative reaction (such as being upset or mentally angry) with a previous more intense reaction (such as physically acting on anger by throwing things or verbal abuse) in order to point out that the person is making progress in dealing appropriately with situations.

While Thoits' conceptualization of stress buffering processes helps to clarify the coping concepts we should remember that the coping attempts of an individual, either alone or with supporters, may not be so clear cut as to easily fit into the boxes of the matrix. For example, when a supporter gives behavioral assistance to help someone alter a situation, the recipient of the assistance may interpret the assistance symbolically and may also emotionally reinterpret a difficult situation. Coping efforts may cut across several response categories, such as if two individuals approach a problem situation by going for a walk and discussing methods for confronting the problem. In this example the physical exercise could alter physiological sensations, while the situation is avoided for a while, but a plan is devised to actively change the situation.

Barrera's four support functions categories of guidance, emotional support or nondirective guidance, tangible assistance, and social interaction can operate within the coping response categories outlined by Thoits. The four types of buffering responses can be facilitated through individuals who perform the functions from within the four categories for or with someone. For example, tangible assistance may help someone behaviorally alter a situation, emotional support could help someone relax and change an emotional reaction, or guidance could help validate someone's reinterpretation of a situation.

While all four categories of functions do not easily fit into each of the four response categories, Figure 2 indicates which of the four categories might be used by supportive individuals to help facilitate appropriate coping responses. In keeping with the belief that more than one response may be elicited at one time, likewise more than one function may be used at a time. Both the situation and the commensurate emotions can be changed at the same time.

Insert Figure 2 About Here

The two figures, the stress buffering responses and the combined responses and support functions, are useful to conceptualize how social support works as a coping resource. The buffering response chart indicates the four ways of dealing with the two sources of perceived stress, while the functions listed in Figure 2 indicate some of the specific means which are available through resource people. Since both Thoits and Barrera conceive of social support from an individualized perspective of how individuals deal with support, it appears that their two views complement each other. Combined the two views can offer an integrated approach for indentifying possible assistance techniques.

Mechanism Focus: Stressor or Self-Efficacy?

The primary target of the assistance techniques should be either the situation or the reaction. Coping competence, or the effective responses of an individual to eliminate or reduce the stressors in the environment, can be best addressed by altering the threatening aspects of a situation or a reaction (Thoits, 1986). Damaged self-esteem, mastery expectations, and identity may be restored or developed as a secondary concern. Self-efficacy should not be the focus of coping assistance, but could be an outcome.

Bandura (1977) states that a person's expectations will determine whether coping behavior will be initiated. He also believes that anticipated consequences can influence how long a person will persist with coping efforts in the face of obstacles and aversive experiences. Self-efficacy, then, is a person's conviction that he or she has the ability to execute a behavior to attain a desired outcome.

Several researchers have asserted that a confiding relationship counteracts stressors by increasing self-esteem and self-efficacy (Cohen & Wills, 1985; Pearlin, Menaghan, Lieberman, & Mullan, 1981). However, from the perspective of Thoits' model coping assistance does not focus on self-efficacy. In dealing with a stressor the focus should be on the source of the stress and not on the mediation of an individual's belief system.

According to Bandura (1977) personal efficacy derives from four principal sources of information: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. These four sources of efficacy are all addressed in the matrixes in Figures 1 and 2. Performance accomplishments would be achieved through behaviorally altering a situation or reaction, vicarious experience would be achieved through cognitively reinterpreting situations or reactions through observations of others, verbal persuasion would be offered through guidance function, and physiological states is directly addressed in behaviorally altering a physiological sensation to address an emotional reaction.

However, while the coping responses may overlap with the sources for efficacy, it does not necessarily follow that addressing efficacy is the most straightforward route for eliminating a stressor. Rather, the stressor itself should be the focus with efficacy as a by-product. Self-efficacy may be an outcome of successful coping. For example, as an individual successfully executes coping behaviors that individual may develop a belief that they have the ability to evoke further change through similar means in the future. Individuals may come to believe that these abilities are in their repertoire of coping skills.

Social support in the form of coping assistance may provide a sense that an individual need not execute behaviors alone. When one is lacking a belief in one's own personal ability that same person may have confidence is his or her ability to perform the action as a part of a group; especially within the context of a group that he or she perceives as nonthreatening. For example, a handicapped person who faces the prospect of locating an apartment and approaching a potential landlord may not feel adequate to handle the situation alone. However, that same individuals may believe that the task could be accomplished with the aid of a parent, peer, or social worker. A supporter's assistance may bolster a person's skills and cognitively reduce an anxious reaction. If skills develop and anxiety decreases, then the belief may grow as well that a person possesses the ability to effect further behavior in similar circumstances.

This more direct focus on changing a situation or reaction may reduce performance doubts and increase mastery beliefs. However, individuals need the coping skills before they can successfully execute the coping behavior. With social support operating as coping assistance a person's perceptions of needed coping skills may be enhanced. When working with a supporter personal efficacy may not be as important in the beginning as perceptions that team or group efficacy exists. While individuals may not believe that they possess the ability to singly alter a stressor, they may have increased confidence in the ability to produce change in tandem with others. Later, as a result of successful change with supportive assistance a greater belief in personal coping skills may grow.

Support Facilitators

Situationally Similar Supporters

People's support networks, or their ties to others and organizations, usually consist of both informal and formal support resources. Informal supporters can be family and friends, while formal support resources consist of people such as teachers, counselors, or those associated with service agencies. In fact, however, an individual can receive support functions from people they do not consider as part of their support network. For example, people on the street often give directions or guidance to strangers in the area, thereby reducing their stress of not knowing where to go. However, the person asking directions would not consider these strangers as members of their social networks.

Usually, however, people how are facing ongoing stressors would be most comfortable enlisting support from their own networks. Thoits (1986) who relies on inferences from social comparison theory believes that people who are socially similar and those who have faced or are facing the same stressors may offer the most effective support. Individuals how have experienced similar situations and come from similar backgrounds are more likely to have an empathic understanding, and are also more likely to suggest appropriate and acceptable coping techniques. These social support precepts run parallel to beliefs that one will increase the personal relevance of vicariously derived information from similar models (Kazdin, 1974; Bandura, 1977).

In research on early adult transitions of nondisabled persons, Tokuno (1986) found that young adults faced with developmental tasks preferred socially similar friends. These young adults perceived friends as their primary choice over family, co-workers, neighbors, and teachers for support. These friends offered support in a number of different ways, including being models, offering guidance as change agents, giving feedback, interacting reciprocally for social growth, and listening without judgement.

While the current mainstreaming movement in education emphasizes placing the disabled into normalized settings to the greatest degree possible, this should not become a mandate for removing these individuals from their peer groups and friends. O'Connor (1983) states that mentally retarded individuals are often well integrated into their family units and many have special friends among their mentally retarded peers. In another study Landesman-Dwyer, Berkson, and Romer (1979) have concluded that the disabled relate well to other disabled individuals, because they often share common interests and experiences.

It could be alienating and counterproductive to advocate integrating these individuals into community settings at the cost of losing their contact with their peer groups. Schalock, Harper, and Carver (1981) examined the degree of integration and adjustment of clients who had been placed in independent living arrangements, and found that one-third of these clients reported no friends after five years in the community placement. In a study by Baker, Seltzer, and Seltzer (1977) adults living outside of institutions reported that loneliness was one of their major problems.

Stress occurs at times of transition to less restrictive environments, which O'Connor (1983) maintains often happens as a mentally retarded individual becomes more competent. O'Connor believes that often placement agents move these more competent individuals away from settings where their friends work and live and deprive them of the social support of their handicapped peers. She maintains that placing these persons into community settings away from their natural supports may be dysfunctional. She believes that this practice isolates them and deprives them of their opportunities for social interaction.

The concept of the least restrictive environment should not exclude peers. However, peers alone may not offer all the support functions which could help a developmentally disabled individual to transition into community settings. According to Schilling and Schinke (1986), relative dependency is a defining characteristic of the developmentally disabled, and as such they may also need the services of recognized experts to achieve their goals. Thoits (1986) maintains that an individual will turn to a socioculturally different helper if the individual presumes that the helper has expertise or potential resources that are unavailable from his peer group. Among the disabled populations this support may be necessary to help an individual gain skill knowledge or access to the benefits offered through the social security system.

Facilitator Networks and Functions

Supporters serve a variety of functions in helping the developmentally disabled cope with stressors. Depending on the stressor and the specific needs, developmentally disabled individuals may benefit from support provided by friends and those they are close to, as well as others from within the community. In a study by Horner, Newton, LeBaron, Stoner, and Ferguson (1986), the researchers interviewed 63 high school and post-high school individuals labeled moderately or severely mentally retarded, and 25 nondisabled individuals. The preliminary results of this pilot study indicate that the disabled had smaller social networks, but tended to use these networks more frequently than their nondisabled counterparts.

The results from this study also indicate that the developmentally disabled had greater numbers of people paid to provide services, and that without these providers the mean size of networks was significantly different between the disabled and nondisabled (11.28 for the disabled versus 19.02 for the nondisabled). Horner suggests that the people paid to provide support may be functioning as the support group rather than facilitating independent community networks. He believes that a greater number of informal contacts and associations will enhance natural integration and adjustment.

In his preliminary studies Horner also examined the extent to which people with and without severe disabilities perceive themselves as contributing and receiving different support functions from people in their social networks. He calculated ratios (received from others/contributed to others) to assess if respondents to a functions survey perceived themselves as contributing more or less to a relationship in 6 different function areas: information on daily events, help in major decisions, material aid and services, access to others, and companionship.

The data showed that people without disabilities perceived themselves as contributing about as much as they receive in all six areas. In comparison the people with disabilities reported receiving far more than they contribute in all functions except information on daily events (0.99) and material aid and services (1.0). The disabled needed much more help than they were able to reciprocate in the following areas: help in major decisions (4.41), emotional support (1.49), access to others (1.8), and companionship (1.5).

Positive implications from this study are that this disabled group was able to reciprocate in some ways, providing some support for both informal and formal supporters. However, the study also shows that these individuals are more dependent on their support systems for some specific types of functions; functions which usually require a greater cost or commitment from the giver. This dependence for potentially draining functions indicates a need for special attention to those who provide the support, so that the providers will not be drained of all their available time, energy, or resources.

Park, Cameto, Tappe, and Gaylord-Ross (1990) conducted a developmental study of mildly retarded (MR), learning disabled (LD), and nondisabled (ND) youth. Measures of social support, quality of life, and quality of worklife were taken of youth in their last year of high school and those in community college. Thus, a 3 (groups) X 2 (grade) design resulted with a sample of 120 youth.

A number of interesting findings resulted. First, quality of life in terms of executing more independence in decision making increased for the LD youth and ND groups increased with transition to adulthood, but not for the MR groups. Apparently caretakers were still deciding what time they would go to bed and other independent living decisions. Interestingly, this MR young adult group reported the highest quality of worklife. They were most engaged by their job tasks and had the best co-worker relations. In contrast, the LD young adults had the poorest view of quality of worklife, viewing few promotional possibilities in their dead end jobs.

The social support instrument developed by Park et al. reported network size and nature of the support. Their study found the ND group to have the largest network size (9-10), and the LD group the smallest (7.5); the MR group was 8.3. These differences were particularly noted at work and the community (versus school or residential). The scale then measured five types of support received in these four domains (e.g., community). There types were: material, guidance, affect, self, and crisis. When summing across domains and types of support, the ND group perceived receiving the most support, the MR group second most, and the LD group the least. Differences across groups were most consistently noted in material support.

The study also measured reciprocal (giving rather than receiving) support. In general, the ND group gave significantly more support than the LD and MR groups, which were roughly equivalent. A ratio of reciprocal (giving) to perceived (receiving) support was calculated. Similar to the Horner findings, a 1.0 ratio (giving equals receiving) resulted for the ND group. The LD and MR groups had significantly lower ratio scores (median = .75). These scores were not as low as reported by Horner (.50) for a severely disabled sample. Perhaps these is a continuum of this ratio support where ND is 1.0, mildly disabled is .75, and severely disabled is .50. The continuum could reflect degrees of caretaker control and/or the extent that persons assume (and are trained to take) support roles.

According to Foa and Foa (1980) the type of resource needed will help determine the provider. Some resources are particular (e.g., love, status, or service), or associated directly with a particular giver. The provider has a greater personal cost in giving the resource. Often the provider must invest more time in the relationship before freely offering the resource. Conversely, other resources are more universal (e.g., guidance, money or goods), and are less associated with the giver. For example, a resource such as money may not be as directly associated with the giver, since money can be exchanged in a variety of transactions such as with a bank teller, a store clerk, or a landlord.

Foa and Foa believe that people will require the coping assistance of friends, relatives, and perhaps caring professionals for particular resources. However, some more universal support functions may be fulfilled by confederates at work, through less impersonal agencies within the community, or willing acquaintances. For example, an individual might be comfortable in asking someone at the workplace for more universal advice such as how to perform a task, or feedback on a performance. In situations requiring more particular functions, such as specialized advice on coping with the disrespectful behavior of others, an individual would be more comfortable in enlisting the aid of parents, friends, or a caring counselor.

Social support occurs in the context of interpersonal behavior which involves the exchange of both particular and universal resources. Sometimes more than one resource will be imparted in one exchange, such as when a person receives behavioral assistance in the context of a social encounter. Therefore universal and particular functions may be better conceptualized as component elements. Lack of one-to-one correspondence has disadvantages from a practical point of view; we cannot easily link supporters from a universal realm to supply only universal functions, or say specifically that only people from one's intimate network should provide particular functions. For instance, a more distant co-worker may compliment someone for completing a difficult job well, thereby symbolically conferring increased status.

While the concept of universal and specific functions does not always indicate exactly who a facilitator should be or could be, this concept does provide part of a framework to help one understand the contest in which behavior exchanges occur. This understanding can make us aware of diversities within the environment, and reveal special conditions which may increase the likelihood of particular functions being performed or fulfilled. Conceptualizing functions as either particular or universal may help us to identify which supporters can help create an effective response to stressors.

Toward a Cognitive-Behavior-Based Intervention

Network Interventions

Little empirical evidence supports the effectiveness of social support interventions among developmentally disabled populations. However, authors in this field have recommended strategies and offered anecdotal evidence of the impact of various social support programs. a more traditional approach to indirectly obtain support is through social skills training (SST). SST trains an individual to emit selected social behaviors like: eye contact, initiations, turn taking, following directions, etc. A withdrawn or antisocial individual may be trained to emit particular behaviors, with the training hopefully generalizing to natural circumstances, e.g., work, recess, home (Gaylord-Ross, Stremel-Campbell,

& Storey, 1986). A behavioral approach has been most commonly utilized (Strain, & Odom, 1986). Here, the targeted social behaviors are verbally illustrated, modeled, practiced, and/or evaluated. For example, Haring, Lee, Rogers, Breen, & Gaylord-Ross (1986) trained a group of mentally retarded children to converse while working at school job sites. The children successfully generalized their conversational exchanges to their actual job interactions. Interestingly, part of the training reinforced the students for producing new, untrained topics in their conversation. The children subsequently produced new as well as old topics while working.

Behavioral approaches to SST have sometimes been criticized for not producing generalized responding as well as narrowly prescribing molecular behaviors. A process or cognitive approach for SST has been proposed by Trower (1983) and McFall (1982). Such a cognitive-behavioral approach has the person interpret social situations, generate alternative strategies for that situation, make a decision to select a particular strategy, rehearse the behaviors, and then self-evaluate one's performance. Process SST makes the individual an active problem solver, and it is hypothesized, more likely to generalize these process rules and strategies.

Park and Gaylord-Ross (1989) evaluated cognitive-behavioral SST with three mentally retarded youth who were working in nonsheltered sites. The social behaviors of initiating, conversing, and speaking clearly successfully generalized from training to real work interactions. Although social problem solving procedures holds promise for mildly retarded individuals, because of its cognitive demands, it is questionable whether it would be useful for persons with more severe disabilities.

Some authors advocate developing and increasing networks, and hope that the new system will then begin performing supportive functions (a modified version of what Stokes and Baer (1971) call "place and pray").

Others urge formalizing the naturally occurring support systems and using the system to impart skill development and ease stress. Both strategies offer potential ways to increase the amount of support functions and ease integration.

Horner et al. (1986) are currently using and studying an approach that they call The Community Networks Strategies. They use this approach with severely disabled individuals with the goal of helping them gain social support through the development and maintenance of social networks. This three-pronged approach attempts to: (a) increase the disabled person's access to others, (b) increase the amount of social contact through minimizing barriers, and (c) maximize the social contribution of the disabled person to network membership.

Horner and his colleagues are implementing the first strategy of increasing access by scheduling social events at school and residential sites. They are also indentifying supportive people from network diagrams for each target individual. After identifying these people they arrange contacts that fit into the normal flow of daily events. They hope that this increased access will help build self-selected relationships.

In order to minimize social integration barriers, Horner's group is implementing many varied procedures. They increase schedule flexibility to allow people to participate in social events. They also keep residential programs small (2-3 individuals) so that the programs are in line with community norms. In another procedure they attempt to decrease community fear by having staff members accompany a disabled member on their initial trips into the community. Finally, they are helping the disabled individuals to develop appropriate social skills and reduce undesirable behaviors so the social options will increase as barriers are reduced.

The researchers offer two suggestions for implementing the third objective of increasing the targeted individual's reciprocal contribution to the network. First, they plan to have staff assist the disabled in offering material aid and services to people in their networks. The disabled are capable of performing small favors such as feeding pets, and acknowledging birthdays; but they may require some initial assistance. The researchers' second suggestion is to alert the staff to any unique ways of contributing to a relationship and to facilitate opportunities for this contribution to occur.

The three-pronged approach may prove effective for the severely disabled. It requires extra effort and flexibility from the staff people, because their caseloads would include the client and to some degree the client's network as well. However, if these methods prove effective they offer the strength of having helped facilitate self-selected, rather than staff-selected relationships. Self-selected relationships may further aid integration into natural mainstream situations.

Karan and Knight (1986) offer several strategies for increasing support networks to better integrate disabled individuals into competitive employment settings. Their major premise is that employment retention of disabled individuals has occurred where reasonable-to-good matches exist between people and their environment. Karan and Knight recommend several measures for increasing social networks and decreasing the risk of a mentally-handicapped individual losing a competitive job in an integrated setting.

First, they recommend indentifying key individuals to function as support people. This can be done through environment scanning. The second measure is for formal staff to assist the handicapped worker in improving successful interactions on behavioral styles, existing attitudes, and potential sources of miscommunication.

Karan and Knight also recommend that both the client and network members change when behavior-change is warranted, because this creates a shared responsibility. However, they believe that this may be difficult to implement because people at the work place may be resistant to any suggestions that they may have to change their behavior as well. Finally, they suggest that higher success rates in arranging support systems could be reached if people providing support have their own support sources. This ensures that their own needs are met by others. Unlike Horner et al. (1986) Karan and Knight seem less sure of the ability of developmentally disabled individuals to supply reciprocal support to their networks.

The approaches of Horner et al. (1986) and Karan and Knight (1986) provide strategies for increasing social integration by increasing social network size. In these cases the formal service providers take responsibility for overcoming practical and social barriers in order to develop and strengthen informal networks. In turn, if these informal support networks are maintained then perhaps many of the support functions will naturally occur and decrease the need for formal services.

Strategies for Socially Supported Change

Other social support interventions directly address support functions and deliberately use members of support networks as change agents. Utilizing members of informal support networks to change behavior adds another component for a more comprehensive social support program. Network members can provide the developmentally disabled with an additional resource which provides specified functions.

Park, Tappe, Johnson, Simon, and Wozniak (199) have explored a co-worker involvement procedure to induce social support at the workplace. A co-worker advocate is identified at a business which employs a learning disabled or mentally retarded youth. The advocate then participates in weekly meetings with an educator. A nondirective approach has the advocate formulate training activities which s/he can use in the subsequent work to better integrate the disabled employee at the workplace. Activities included joining co-workers at break or going to a social event after hours. The co-worker training led to a wide range of integration and support activities. Outcomes across disabled employees were inconsistent. Some workers increased their social interactions at work with social validation measures indicating they had become more socially competent. Other disabled employees had no such salutary effects. The absence of treatment effects was interpreted in terms of social ecology variables. That is, the disabled employee was placed in a setting with nonsupportive co-workers or in a schedule which allowed for few opportunities for interaction.

Schilling and Schinke (1984) offer suggestions for other social support strategies in more general settings. While social support functions may occur naturally for many nondisabled, Schilling and Schinke state that in varying degrees handicapped people are more dependent than their nonhandicapped peers. Therefore a network is strengthened when professional and nonprofessionals work together in a partnership. They suggest that service providers can constructively tap the social networks for the developmentally disabled. In this way partnerships of formal and informal supports can implement change plans.

They cite examples of social workers who have achieved short- and long-term goals by working with members of support networks. If professionals can constructively guide supporters to break goals down into achievable objectives, then supporters can be spared being overburdened. People from a client's naturally-occurring support environment can help a client to overcome fears about being with others through modeling and role plays. They can also aid orientation and mobility within the community. However, the informal supporters work in tandem with professionals. Schilling and Schinke state that a smooth learning process ensues when formal service providers help changes. They can help implement plans by explaining methods, demonstrating actions, offering feedback, and providing reinforcement to both the client and the supporters.

This partnership system may be time consuming, because it calls for greater coordinated effort. It also works only if everyone in the partnership, including the client, has committed to the change process. To facilitate the success of supported interventions the key people need appropriate interpersonal skills, patience, and available time. Reciprocally, the clients need an ability to work within a relationship and an ability to change their behavior. However, professionals also need to be aware that some members of networks may be deleterious for reaching certain goals. For example, some individuals believe that the disabled should be protected and discourage their bids for independence. While these people may be helpful in supplying some support functions, their goals as benevolent benefactor may conflict with goals related to community adjustment.

If service providers are aware of these drawbacks, they can selectively use support networks to their benefit. While social networks are not a panacea, interventions which use these natural supports have the advantage of working with the unique norms of a given environment. They also potentially offer an ongoing service a caring nature, and relevance to the handicapped individual's life. When informal supporters provide support these functions may have a stronger and more continuous influence than if a formal service provider performed the same services in a transitory manner.

A Proposed Coping Assistance Intervention

The social support strategies discussed in the previous section offer some insight into the ways that social support can help to promote adequate coping. These adaptational mechanisms can allow the handicapped to aspire toward their full potential. However, another approach, which combines the concept of coping assistance with support networks may offer a more specific understanding of how social support can aid the developmentally disabled during times of transition.

Before delineating a specific intervention model, it may be useful to present our overall conceptual model from which an intervention(s) emerges (Gaylord-Ross, Park, Cameto, & Tappe, 1989). Figure 4.3 presents an ecosocial model of social reality and intervention. The higher modules index more macro social phenomenon. The lower modules reference more individually based modules. Starting from the bottom, intraindividual social reality represents the cognitive variable describes above in cognitive SST. The individual makes sense of his different social settings and then proceeds to generate and test problem solving strategies. The locus of social reality and intervention is within the individual.

The next, social interaction focuses on particular social behaviors which are emitted during dyadic or small group exchanges. Behavioral SST typifies the type of interventions which attempt to enrich the number and quality of social interactions between disabled and nondisabled persons.

The third, social network level attempts to enumerate and describe the types of social relationships in a person's life. This relationship analysis corresponds closely to the social support notions addressed in the chapter. A number of relationship interventions like peer tutoring, special friends, and co-worker advocacy have been conducted and evaluated (Haring, Lee, Pitts-Conway, Breen, & Gaylord-Ross, 1987, Park et al., 1990).

The final macro level of social reality deals with institutional or general setting variables. For example, social behavior has been characterized as situationally specific, dependent upon the rules and expectations of settings like school or home. Special education research and policy has often contrasted behavior in segregate, separate schools versus integrated, public schools. Macro-interventions may include district wide school integration plans or support employment programs which convert workshop to nonsheltered employment programs. In all of these cases a change in some macro setting variable is presumed to lead to substantive changes in social behavior. In summary, the ecosocial model offers a means to interpret and design social programs.

An appropriate strategy would be one in which a professional helps a developmentally disabled person to become aware of stressors, and also helps to facilitate access to available supports. Awareness and access may facilitate a match among the stressor, the strategy, and the supporter, in order to eliminate or reduce the source of stress. Lazarus and Folkman (1984) indicate that the novelty and complexity of many stressful encounters may create demands beyond the person's resources. On the other hand a person may possess adequate resources, but allow the resources to go unused because of a fear that using the resources will increase conflict and distress. With the guidance of an intermediary (itself a support function), a developmentally disabled individual may be able to more effectively address the stressors of transition. A counseling strategy which provides an awareness of stressors and coping assistance to address the stressors may prove useful for these young adults.

An Awareness and Access Strategy

A strategy for developing better awareness of stressors and access to different sources of social support for coping assistance would entail four basic steps: 1) assessment and awareness; 2) matching and planning;

3) access and mediation; and, 4) evaluation. This strategy offers a proposed list of procedures for helping the developmentally disabled cope with the stressors that they face as they try to transition into community settings in order to live independently. A flow chart which indicates the manner in which these four steps could be carried out appears in Figure ~~3~~ 4. Some explanations of the various aspects of the chart are covered in the following sections.

Insert Figure ~~3~~ 4 About Here

Assessment and Awareness

This step would entail assessing the current social environment of a developmentally disabled adult. Social relationship are built on such things as common interests, shared resources, and common understanding. These relationships occur across a number of domains in a person's life, and can include: family, friends, professionals and representatives from social agencies, groups for voluntary associations, confederates in the work place, and members of the community. A map could be drawn up that lists supporters from these various domains, and also indicates which supporters have helped before and those who may be available to be enlisted for help.

A network diagram would be a helpful tool for making an individual aware of active and potential coping facilitators. It could also help one become aware of individuals who may be overly burdened and point up areas where supporters may need to be sought out and added. Since networks are dynamic rather than static the networks may need to be charted more than once as an individual transitions and adjusts into a community.

The second aspect for assessment and awareness would be to identify the stressors that a developmentally disabled individual anticipates or perceives as impinging on the transition to independent community living. In addition to self reports of stressors an individual could also be given a questionnaire to cue and prompt responses from an individual. Some developmentally disabled individuals tend to be compliant when talking to an authority figure, or they will not consider the various aspects of their problem areas. A questionnaire would give them the opportunity to express themselves across a wide variety of areas and could help to prioritize their perceived stressors.

According to an informal survey with 20 mildly retarded young adults who do not yet live independently, they anticipate many stressors in their transition to the community. I surveyed these young adults, who range in age from 19 to 28 (average age is 20.4 years), in a community college setting east of the San Francisco Bay Area. All of the students are enrolled in a vocational living skills program and plan to live independently. Currently 18 of the students live at home with at least one parent, and two live in group-home residential settings. Approximately one-third of the students are in part-time competitive employment, and another third have volunteer work positions. The remaining third has had at least some work experience in either a high school or summer job training program. After compiling their responses to an open-ended questionnaire about potential stressors, the same students then responded to the various stressors on a five-point Likert scale.

The averages of the students' responses to the anticipated stressors appear in rank order in Table 1. These stressors are related to anxieties about community living and competitive employment. The top five stressors that emerged from the survey include: a belief that they would be more afraid of break-ins if they lived away from their parents; that they would need help to develop new skills before they could live independently; that their parents would miss them and be reluctant to let them go; that they might mistakes on their jobs; and, that they do not yet possess the skills to maintain employment in a full-time job.

Insert Table 1 About Here

A questionnaire could be developed based on this list of stressors. However, since anticipation and actuality are not always the same it could prove beneficial to add stressors derived from a list of individuals who are now living independently. A prioritizing scale could be used in order to help a developmentally disabled individual become aware of which stressors, demand the most attention at any given point in time. An individual's stressors, like their networks, are ever-changing, so a single assessment may not yield the total coping picture.

Matching and Planning

In keeping with Thoits' (1986) proposed coping assistance model a variety of supportive strategies can be derived by integrating one or more support people with a method of coping. Using the two-by-two matrix in Figures 1 and 2, a variety of questions regarding an appropriate plan can be derived. These questions would examine aspects of three different areas: the stressor itself, the mechanism for change, and the appropriate coping facilitator. After examining these questions an appropriate match could hopefully be made between individuals on the network list, and an appropriate means for coping with the stressor.

Questions about the stressor would concern whether problem-focused coping or emotion-focused coping would be more appropriate. According to Lazarus and Folkman (1984) emotion-focused forms of coping are most often used when nothing can be done to modify harmful, threatening, or challenging environmental conditions. On the other hand problem-focused coping generally occurs when a person judges the conditions as amenable to change. Therefore, questions would be directed toward identifying whether an anticipated stressor could be changed, and whether changing the situation would be enough to eliminate or reduce the perceived stressor.

Questions regarding the coping mechanism would address whether cognitive or behavioral mechanisms would be better coping strategies. At this point a more concrete list of ideas for a plan might be derived from examining the more specific functions that Barrera (1986) elaborated. Questions would concern which functions would best serve to alter either the situation or one's reaction to it. Since coping assistance is often complex (Thoits, 1986) an individual may identify multiple functions, some of which might occur simultaneously.

Finally, the last set of questions would address who within the network could fulfill the functions. At this point an individual would be evaluating whether the function is more particular or universal and also who could most easily be approached to provide coping assistance. Questions would concern whether a supporter needed to be close to an individual in order for a good facilitator/function match to occur. According to Thoits (1986) is distress is most effectively reduced by manipulating situations or feelings, then others who share similar perceptions of and reactions to the circumstances would be likely candidates for effective coping assistance. However, a close individual may in some instances lack the resources to provide adequate assistance. In those cases others may be more beneficial aids.

Access and Mediation

Once an individual has identified a coping plan and a coping assistant, the next step is to bring the individual and the supporter together and be sure that they can reach an agreement about the willingness of both to commit to the plan. If needed a counselor and an individual could role play access situations in order to develop the social skills needed to approach a person and ask for assistance.

If a supporter agrees to provide coping assistance, then the individual and the supporter should meet and modify or refine plans. This approach should help to create an understanding and ownership of the strategy. Ownership may enhance commitment. At this point the plan would be carried out. This partnership approach to coping should either eliminate or reduce the person's perception of the stressor or that more successful community adjustment would follow.

Evaluation

Following a coping assistance strategy a counselor should examine the outcomes. An evaluation would assess the effectiveness, efficiency, and satisfaction with the strategies used. It would include both naturalistic observations and surveys of individual perceptions. Outcomes would included the degree of adjustment within the community, the speed and degree of change, the durability of change, the generalization of the change to other coping strategies, and also the growth or development of self-efficacy.

Since adjustment within the community at transitional times is the ultimate goal of the intervention, then the degree of adjustment should be an indicator of whether the appropriate stressors have been addressed in order to promote well-adjusted independence. The speed of change would indicate how fast change occurred, if at all. The degree of change would provide an indicator of whether a stressor had been sufficiently reduced of completely eliminated.

An evaluation should also examine the durability of change; that is, whether the perception of change is the stressor lasts momentarily of for a greater period of time. Another aspect of this dimension would be to examine if the stressor recurs or ceases to be a problem. A thorough examination would also assess whether an individual could apply the same or similar strategy to other stressors. Finally, since self-efficacy has been posed as a possible outcome of coping strategies it would be interesting to examine whether individuals begin to develop beliefs that they possess the ability to cope with situations and handle stressors as they experience success from coping strategies.

Conclusion

Neither social support nor coping assistance are unitary constructs, and the integrating of the tow only intensifies this concept. The proposed intervention involves complex processes, and has a multidimensional nature, but it should offer some practical utility for introducing coping assistance to a dependent population. Ironically, this is an intervention which uses the dependent properties of social relationships in order to help promote independence. However, most of the normalized population does not experience independence exclusive of others, and according to the cognitive behaviorist perspective we will never be free agents who control our own fates and destinies (Bandura, 1978). Rather, the self can only evaluate and to some degree regulate the situations which occur within a social environment.

The social environment does not need to be merely the source of stress or represent the circumstances under which stress is interpreted. It can also serve as a source for the coping mechanisms that can reduce or alleviate the stress. Experimental interventions have yet to indicate the effectiveness of coping strategies on transitional stressors. However, research on the proposed model may yield effective instruments and increased theoretical and practical clarity concerning the structure and function of transitional coping as an effective counseling intervention.

A supportive system offers a more enduring nature with a greater relevance and a greater adaptability to common changes and instability. Social support interventions focus on creating a receptive environment in which appropriate perceptions and performance can more naturally occur. Through working with the environment as well as the developmentally disabled individual the onus of change is not solely focused on the target person. This shared responsibility can benefit both the disabled person and the people in the environment because it promotes a better person/environment fit for everyone.

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Table 1

Mean Rating of Anticipated Transitional Stressors by Mildly Retarded Young Adults.

	Anticipated Stressor	X Rating
1.	Break-ins in an independent apartment	4.50
2.	Need for added independent living skills	4.14
3.	Fear that family will miss them	4.14
4.	Making mistakes in a job	3.86
5.	Need for new skills for a full-time job	3.79
6.	Fear of drug dealers and shootings	3.71
7.	Developing driving skills	3.64
8.	Need for help to set up an apartment	3.57
9.	Findinga an apartment in a good location	3.21
10.	Budgeting money	3.21
11.	Inability to get a job	3.21
12.	Need for more financial resources	3.07
13.	Not knowing who to consult with problems	3.07
14.	Not knowing others in the community	3.07
15.	How to meet others	2.86
16.	Doing taxes	2.79
17.	Asking others for help	2.79
18.	Being lonely	2.57
19.	Parents reluctant to allow them to move	2.57
20.	Finding a roommate	2.50
21.	Being on time for work	2.50
22.	Arranging for phone and utility hook ups	2.43
23.	People perceiving them as different	2.29
24.	Missing their families	2.07
25.	Lacking maturity	2.00
26.	Producing quality work on the job	1.71
27.	Fear of being fired	1.50

List taken from a survey in which the respondent ranked each concept on a five-point Likert scale:

1. Disagree a lot
2. Disagree some
3. Not sure
4. Agree some
5. Agree a lot

Figure 1

Stress buffering responses.

	Situation (problem)	**Emotion (reaction)**
Behavioral	Alter the situation (Avoid or change)	Alter physiological sensations (Substances, relaxation, or exercise)
Cognitive	Reinterpret (Devalue or distract)* * Important if situation cannot be changed	Reinterpret (Role play appropriate feelings, relabel, or biofeedback.)

Figure 2

Buffering responses and support functions

	Situation (problem)	**Emotion (reaction)**
Behavioral	Tangible assistance Guidance Social interactions	Tangible assistance Guidance Social Interactions Emotional support (non-directive
Cognitive	Guidance Social interactions Emotional support (non-directive)	Guidance Social interactions Emotional support (non-directive)

Figure 4

The Ecosocial System

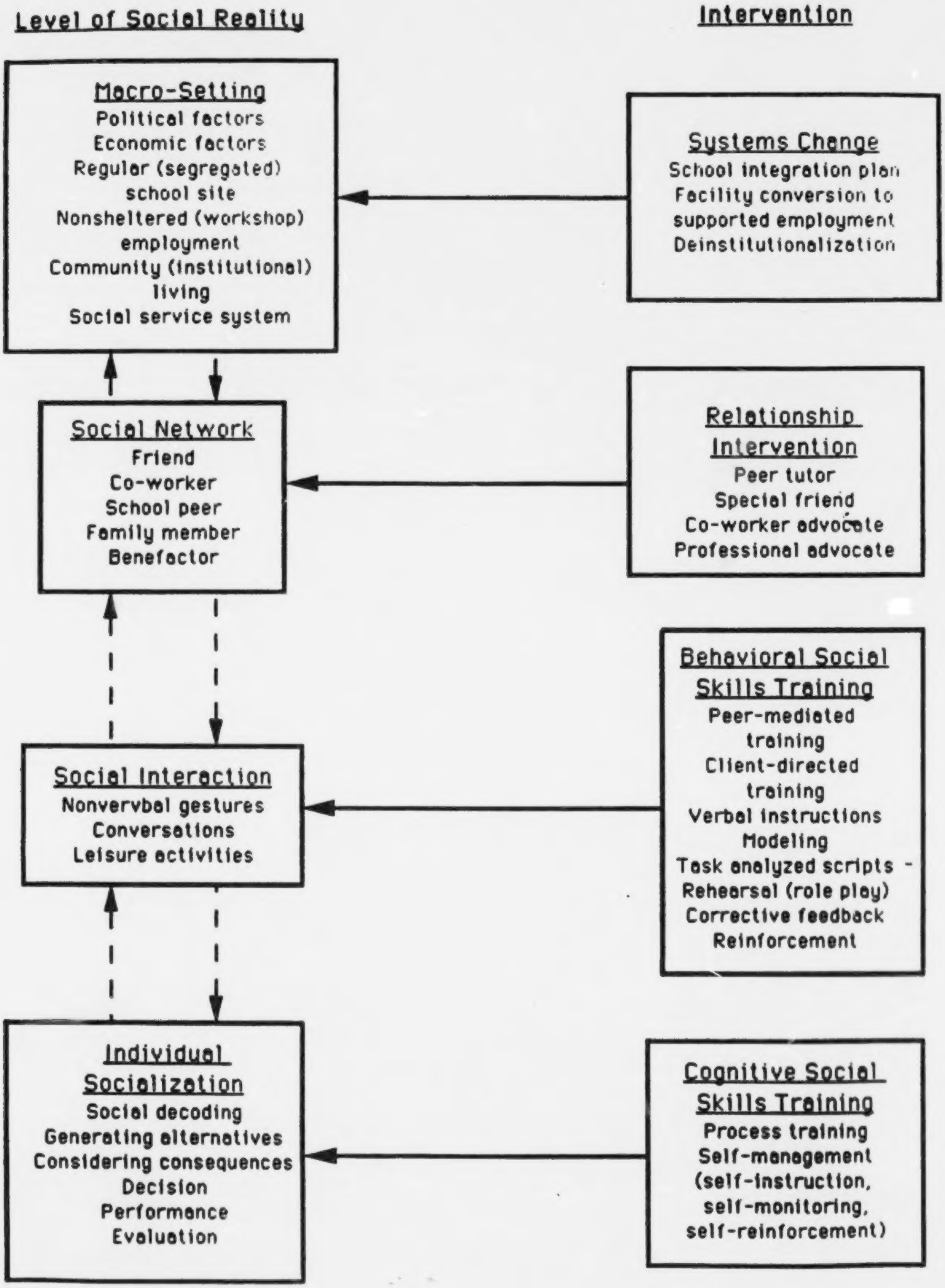
Level of Social Reality
Intervention
Macro-Setting
Political factors
Economic factors
Regular (segregated) school site
Nonsheltered (workshop) employment
Community (institutional) living
Social service system
Systems Change
School integration plan
Facility conversion to supported employment
Deinstitutionalization
Social Network
Friend
Co-worker
School peer
Family member
Benefactor
Relationship Intervention
Peer tutor
Special friend
Co-worker advocate
Professional advocate
Social Interaction
Nonvervbal gestures
Conversations
Leisure activities
Behavioral Social Skills Training
Peer-mediated training
Client-directed training
Verbal instructions
Modeling
Task analyzed scripts
Rehearsal (role play)
Corrective feedback
Reinforcement
Individual Socialization
Social decoding
Generating alternatives
Considering consequences
Decision
Performance
Evaluation
Cognitive Social Skills Training
Process training
Self-management
(self-instruction, self-monitoring, self-reinforcement)

Figure ~~3~~ 4
Transitional Coping Assistance in a Counseling Intervention Context: Access and Awarenss.

I. Assessment and Awareness

- a. Network Analysis:

  Across domains:

  individual

  - family
  - friends
  - professionals and agencies
  - voluntary group associations
  - confederates at work
  - community associations

- b. Indentify stressors

II. Matching and Planning

- a. Stressor
  - situation
  - reaction
- b. Mechanism for Change
  - cognitive
  - behavioral
- c. Coping Facilitator
  - particular
  - universal

III. Access and Mediation

- a. Commitment and Revision
- b. Follow Through with Plans

IV. Evaluation

- a. Outcomes: Successful community adjustment
  Speed and degree of change
  Durability of change
  Generalization
  Self-efficacy

ECONOMICS, INDUSTRY, AND DISABILITY:
A LOOK AHEAD

By

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Paul H. Brookes Publishing Company (Baltimore)

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Economics has been referred to as the 'dismal' science. Seemingly good news (growth in jobs), may be interpreted as bad (heating up inflation). Apparent bad news (loss of jobs to foreign countries) may be interpreted in a similar negative light (cf. Easterbrook, 1989), Economics, Industry, and Disability: A Look Ahead appears to forecast good news for the employment of persons with disabilities. W. Kiernan and R. Schalock (Eds.) have assembled an impressive array of experts to address the topics of legislation, marketing, technology, support mechanisms, accountability, and quality of life issues as they relate to the economics of training and placing disabled individuals into nonsheltered work settings. The volume represents a mid-life view of the economic analysis of this task. That is, data bases are being assembled and analyzed; conceptual models are emerging that transcend the facile rhetoric of "lets hire the disabled." Such analyses are pointing to the generally positive benefit-cost aspects of employing persons with disabilities, even those with the most challenging needs. Yet, there remain a number of difficulties in this political/economic vocational movement that transcend the matters of model implementation, quality control, and replication.

The good news is that empirically validated, supported employment programs appear to work and are being replicated with a wide variety of disabled individuals (Gaylord-Ross, Lee, Johnston, Lynch, Rosenberg, & Goetz, 1989). The chapters in this volume by DeStefano; Rusch, Trach, Winking, Tines, and Johnson; and Sale, Wood, Barcus, and Moon give the reader a fine sense of the components of effective supported employment and transition programs. Most importantly, Thornton, Dunstan, and Matton provide cost estimates of these programs. Yet, perhaps the tour de force chapter of the volume is the Wehman and Hill presentation of benefit-cost data of the 214 participants in their Virginia Commonwealth University supported employment program. This and other large data bases point to the substantial start-up costs with supported employment followed by relatively reduced costs for individuals who only require intermittent follow-up services. Comparative studies (e.g., Conley & Noble, 1990) are finding that community-based supported employment programs are more cost effective than alternative sheltered programs. Also, quality of life and quality of work life appears to be generally superior in nonsheltered versus sheltered work contexts (Jones, 1989; Inge, Banks, Wehman, Hill, & Shafer, 1988) Yet, one may still question whether supported employment is 'cheaper' than no adult program. While Conley and Noble have argued that some type of adult program is becoming the norm, Ward and Halloran (1989) have documented the expanding waiting lists for adult programs.

Once again, the demographic coin reflects an image according to which side you look. For instance, a recent survey (National Association for Rehabilitation Facilities (NARF), 1989) reports that "supported employment is expanding rapidly." Yet, Mank, Buckley, and Rhodes (1990) indicate that only 10% of severely disabled adults can access supported employment. In general, though, the field is advancing beyond a 'continuum of service' notion whereby supported employment is just one vocational option in which a person may advance from sheltered programs. The chapter by Bacon and Cummins convincingly advances an 'array of services' notion in which a community placement is assumed. This idea supercedes the outdated 'continuum of service' idea in a quantum leap fashion. Bellamy, Rhodes, Bourdeau, and Mank (1986) have shown that few persons advance from sheltered to integrated placements, even though the model was intended to promote such a progression. The Bacon and Cummins 'array' notion places the individual, from the start, in a real work placement and designs the fabric of services to maintain that placement.

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For example, an adaptive communication device may be used to express one's needs to co-workers. Two job coaches may be temporarily needed to manage the disruptive acts of a behaviorally disordered employee. The array of service concept articulates the need for a safety net of technical services to maintain integrated work placements.

Despite the incremental expansion of supported employment reform, a number of problems of no minor magnitude remain. Although benefit-costs analyses may show a net benefit to society (decreased SSI payments, tax contributions, reduced employer taxes (federal tax credits)), these savings do not often flow back to the program provider. The Social Security Administration might be benefiting from supported employment because of a reduction in payments to its disabled clients. Yet, adult service agencies often continue to be run 'on a shoe string.' In the NARF survey cited above, service providers overwhelmingly rated the instability of ongoing and long-term funding as the major impediment to supported employment. In terms of program operation, this translates to poorly paid job coaches barely making above the minimum wage (or at the same level of pay as their clients), which could place them at a poverty level for family income. Insufficient pay leads to turnover, deprofessionalization, and raises doubts as to whether the creative instructional technology and job accommodations delivered in university-based programs can be replicated in underfunded service programs.

Yet, the Kiernan and Schalock volume advances systems and models which have effectively worked within the economic and policy constraints of latter twentieth century America. The most elegant and appealing concept presented across chapters is the notion of environment-person matches, Editor Schalock's own research has shown that higher quality of adult and work life result when an individual's needs, abilities, and preferences are congruently matched with the environmental variables in community, residential, and work settings. Calkins and Walker advance this ecosocial notion by reporting of their habilitation planning package which has job coaches and other rehabilitation personnel maximize the person-environment fit in employment settings. Of late, community-based investigators have eschewed the use of vocational assessment information for having little functional utility. Person-environment, ecosocial approaches to assessment, as well as Russell's discussion of the creative uses of aptitude tests, may be ushering in a neo-psychometric phase of vocational assessment.

Ultimately, the two thirds unemployed figure for disabled adults will only be reversed when our nation exhibits the political will to attain this goal. Political will was found to be a critical factor in integrated employment across a number of countries in Western Europe (Gaylord-Ross, 1987). In a country like Italy, which embraced this goal, numerous supported employment programs blossomed. Although increased rates of unemployment curtailed placement rates, integrated employment programs remained viable. A Harris poll recently reported that the vast majority of unemployed disabled adults express a wish to become employed. Furthermore, Walls, Dowler, and Fullmer (1990) have asserted that when disincentives (e.g., SSDI) for working recede, consumers will rationally opt to enter the world of work. The question then remains as to what other structural changes are needed to further accelerate the supported employment initiative?

A first activity in substantive systems change is to alter the awareness and expectations of citizens, employers, professionals, and parents. There has been considerable media and inservice activity in this field and the marketing chapters in this volume suggest a number of useful tactics. Lattuca, Venne, and Campbell advance an appealing marketing plan which stresses 'quality' in developing alliances and partnerships with business. Yet, the notion of marketing and related structural change needs to go further. For example, in contrast to Europe, affirmative action proposals have not been well received, particularly from the business community. The redirection of taxes (viz. through the Targeted Job Tax Credit (TJTC)) has been a much more popular approach for generating incentives to hire persons with disabilities. Still, the federal TJTC has had a checkerboard degree of success in stimulating hiring and placement. Congress has at times waffled in its support of the tax credit. Also, the tax credit is time limited, which contrasts to the emerging life-long models of supported employment. In addition, the tax credit does not substantially affect the budgets of some companies, and many employers do not wish to deal with a governmental program and its related paperwork.

A viable and marketable employment strategy must expand to a broad cross-section of consumers, professionals, and employers. Johnson and Schalock explain how to develop an effective marketing orientation through meeting consumer needs. The business community tends to be conservative and therefore wary of governmental programs, restrictions, and costs. Social service professionals are oftentimes liberal and do not empathize with an employer's need to turn a profit and meet production demands. Models, ideologies, and images must be developed which can cut across these diverse perspectives and enlist the political will of the nation.

I would maintain that the notion of "choice" contains many of these desirable elements. In current polls, the right of a woman to choose to have an abortion has the support of a considerable majority of the populace. Similarly, educational models like magnet schools, which permit a parent (student) to select a particular school, have become increasingly prevalent and innovative. The former position has a liberal association while the latter a conservative one. Yet when articulated within a choice framework, both of these issues can enlist a wide range of support from the populace, well beyond their narrow articulation within a particular ideological credo. The implications of choice for disabled students could be promising. A parent could exercise her choice for an integrated school within or outside of the school district. Consumers would not have to be relegated to a single program option.

Choice in employment opportunities could have a similar appeal. A consumer might select a sheltered or integrated work placement. In a voucher type of choice procedure, the individual would purchase a certain array of services that effectively mediated a successful person-environment fit. The fiscal base of this voucher would originate from program service money as well as flow-back monies from reduced costs in SSI and other welfare programs, as well as newly contributed taxes by the disabled employee. Eventually, the intensity and cost of these services could diminish with job stabilization. Recently, Wood (1989) has sketched a schematic of such consumer chosen voucher systems for supported employment.

Ultimately though, employers will have to play a larger role in vocational support systems in order to maximize their benefit/cost ration. In this regard, employers would assume the responsibility and costs of supervision and accommodation as the disabled employee becomes absorbed into the fabric of the company. In the present volume, Googins points to the potential of employee assistance programs in providing important support services at the workplace. Googins believes that such programs could be further accessed in order to fund supported employment efforts. In the past, Rhodes and Valenta (1985) have reported how a large corporation assumed the costs of job coaches at a supported employment site. Unfortunately, there have been too few replications of employer's taking ownership and absorbing these major budgetary costs (salaries of job coaches, rehabilitation counselors, etc.) When such salary assumption occurs, the costs of employment programs will descend dramatically.

Economics, Industry, and Disability: A Look Ahead takes stock of extant economic and related developments in this field. It also makes a number of future projections related to costs, benefits, marketing, and quality of life. It was in this futurist spirit that I took the liberty to advance a choice model of employment services. As stated above, the Kiernan and Schalock volume offers a mid-life view of this topic. As larger scale data bases appear and as more technologically advanced service models evolve, an even more seasoned compendium of the science of economics and disability employment will emerge. This is not a criticism of the present volume, but rather a characterization of the current state of the art in an emerging field. Given the energy, intelligence, and commitment of the participants in this endeavor, I suspect that future volumes explaining economics and disability will paint a sanguine and not dismal picture.

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Student-Centered Variables: Assessment

Functional Assessment: Dynamic and Domain Properties*

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Functional Assessment: Dynamic and Domain Properties

We approach the topic of assessment with caution, if not resistance. Assessment has not always served persons with severe handicaps well. Historically, the main 'treatment' for this population was conducting exhaustive assessments. The assessment findings tended to emphasize the deficits and other negative aspects of the individual. Often clinical and sometimes obscure diagnostic labels resulted from the assessment. Most troubling, the assessment report usually had few guidelines or suggestions for subsequent intervention. Rather, the report was likely to be 'shelved', thus having little impact on later education or therapy. Thus, in some quarters, assessment has become a dirty word. Service providers have often avoided spending much time on assessment, and went directly into teaching activity. More likely, assessments were completed for the purposes of labeling, funding, and planning (I.E.P.) requirements.

In contrast to this bleak portrayal of traditional assessment, a new approach to assessment is proving its utility and gaining a number of adherents. Functional assessment is an approach that attempts to provide information that will be of direct benefit to the individual. Functional assessment has been a broadly defined term, but some of its main characteristics are:

1. It focuses on practical, independent living skills which enable the person to survive and succeed in the real world.
2. It has an ecological emphasis which looks at the individual functioning in his surrounding environment.
3. It examines the process of learning and performance.
4. It suggests intervention techniques that may be successful.
5. It specifies ongoing monitoring procedures which can evaluate treatment progress.

Functional assessment thus parallels the curricular changes in the severely handicapped field which have emphasized a "functional" approach. It has avoided past pitfalls which stress the deficits of the individual in clinical isolation, while describing skills the person has attained and how they can be utilized in the environment. Furthermore, it does not usually report scores or labels. It describes the learning process and suggests intervention strategies. Thus, assessment is not episodic; it is formative, as it interacts with ongoing instruction and evaluation. Wherever possible, the individual participates in assessment, with his preferences and choices being considered.

The premises of functional assessment seem to be appealing. The purpose of the chapter will be to review the advances of functional assessment. A domain approach will be used so that work will be organized into: social, vocational, behavioral, home, community and related skill areas. The review will point to advances and limitations. While not proposing a new assessment instrument, certain proven procedures are described and new approaches advanced. The style of writing is hopefully "functional" so that the reader can take this information and apply it to her own circumstances.

Behavior Management

Historically, problem behaviors were the first class of behaviors to be addressed with systematic instruction. Emerging from this deficit context, problem behaviors like aggression, self-stimulation, and self-injury were portrayed as the primary defining characteristics of the individual. As the functional curriculum approach emerged, positive skills became the primary characteristics to be addressed. Problem behaviors were then dealt within the context of simultaneously teaching functional skills. An unresolved debate has questioned whether it is first necessary to suppress disruptive behaviors with behavior modification procedures before substantive skill learning can proceed (cf. Koegel & Covert, 1973). The functional skill view would argue that both skill building and behavior modification can proceed concurrently, with improvements in both domains. A stronger, yet unproven assertion, is that the early introduction of functional curriculum can prevent the appearance of most problem behaviors.

The field of behavioral assessment has developed from within the behavior modification and applied behavior analysis disciplines. In many respects, the notion of behavioral assessment overlaps with the concept of functional assessment. For example, Hawkins (1979) has described a five-phase model of behavioral assessment which is quite congruous with our description of functional assessment. Hawkins states:

1. There is an initial screening phase which grossly and briefly determines what kind of program is appropriate for the person.
2. A diagnostic phase assesses the specific characteristics of the problem. Such a detailed functional analysis may be approached with multiple measures including behavioral observations (in vivo or in laboratory), checklist inventories, and standardized normative tests.
3. An intervention formulation phase, where pilot trials of the treatment may be assessed.
4. An ongoing monitoring and evaluation system is designed to be used during the implementation of intervention.
5. A follow-up phase collects maintenance information.

Besides noting the similarities between behavioral assessment and functional assessment, it is apparent how assessment and treatment interweave. They both include the formative notions of evaluation and assessment (Irvin, 1988).

Rather than having summative, or one shot assessments, the assessment process monitors behavioral development throughout the treatment regimen. Although there is this repeated measure notion, it is still likely that most of the assessment effort will occur in the early phases (1, 2, & 3 of Hawkins' model).

Decision Models

The formative notion of assessment has been particularly advanced within the behavior reduction framework. During the first 20 years of the behavior modification field, a number of treatment procedures received empirical validation. Some of these procedures included: differential reinforcement of alternative behavior, timeout, differential reinforcement of incompatible behavior, and overcorrection. A number of investigators felt the need to take stock of these procedures and set guidelines for their selection.

Both Gaylord-Ross (1981) and Meyer and Evans (1984) advanced decision models to assist the practitioner in the behavior intervention process. These decision models included the following sequence:

1. Determination of the seriousness of the behavior to warrant behavioral intervention.
2. The ruling out of alternative etiologies like biomedical and pharmacological factors.
3. The accumulation of quantitative baseline data.
4. The conducting of a functional analysis of behavior.

5. The possible selection of an ecological intervention, e.g., learning in a larger room.
6. The possible selection of a positive reinforcement intervention.
7. The possible selection of an antecedent stimulus arrangement (e.g., modifying task difficulty to easier materials).
8. The possible selection of a punishment procedure.

Extensive information is collected throughout the treatment sequence. Yet, the repeated measures graph of the target behavior(s) become the central data set. The functional analysis of the cause of the behavior, e.g., peer reinforcement, guides a decision for treatment selection. Further, data collection evaluates the effectiveness of the treatment. If it is not completely successful, a subsequent intervention may be selected.

Although visual inspection of the repeated measures graph (i.e., baseline to treatment A; treatment A to treatment B) has been the primary way to assess treatment effectiveness, the additional criterion of social validity has been added and required before a final determination can be made. Social validity will be discussed throughout this chapter as a necessary criterion in functional assessment. Social validity entails that a substantive change in the client has occurred. It asserts that a visual decrease in responding on a graph may not constitute significant treatment success. Social validity is determined in two ways. A normative (or situationally acceptable) criterion states that the behavior would have decreased within the range of a nonclinical sample of peers. For example, a sample of classmates in the targeted child's class may only be out of their seat during instruction from 0-3 times (per pupil) during a school day. The successful treatment of "out of seat" behavior would have to reduce the targeted child's frequency to within this range.

The second kind of social validity involves subjective judgement. A number of significant others (peers, teachers, parents) would indicate whether the client's targeted and related behaviors were not troublesome or had improved substantially. The subjective judgment is made from observing the client in the criterion or other settings, or by viewing videotapes of his behavior in these settings. Responses are given on a series of questions, usually in a Likert-scale format. Subjective judgments may be obtained at the end of treatment (and at follow-up). For more precise discrimination, they may be given before (pretest) and after (posttest) treatment.

Social validity is important in determining the significance of treatment effectiveness. When used in conjunction with repeated measures, observational data, one can be fairly confident in obtaining treatment success. Also, social validity measures have the advantage of being fairly easy to implement.

Implementation

A central topic of this chapter will be the ease and likelihood of implementation of different assessment procedures. We feel that there is a critical crisis between theory and practice in the severely handicapped field. By theory we do not refer to an esoteric model of learning or research on, for example, the conditional probability of a social interaction sequence. Rather, we are referring to the fundamental data collection that may be done in model demonstration classes, in preservice practicum experiences, and in exemplary public school classrooms. There appears to be a real resistance and decline in data collection in typical school programs (Rosenberg, 1987). In spite of inservice programs and attendance at professional meetings, there appears to an entropy in the use of simple recording procedures. Peck (1988), for example, found great difficulty in implementing simple systematic instructional procedures with a well intended, inservice group.

If repeated measurement is in fact poorly implemented in the field, we may wish to explore alternative models of measurement and evaluation. A functional assessment approach might be a more reasonable way to proceed. Rather than expecting repeated measures of skill acquisition on a daily basis, we might conduct intermittent assessment probes. The simplest approach would be to have a pretest before intervention, a posttest probe immediately after intervention, and a follow-up probe, one to 12 months after training.

Fortunately, repeated measurement in the behavior problem domain has been less of an issue. When a disruptive behavior appears, it tends to draw the attention of many persons. Often it becomes the top priority in a person's educational program. The individual may be in a program with a teacher trained to deal with behavior disorders and/or have consultants with similar skills. Thus, there is a greater need, as well as attending professionals who may increase the chances of a more careful monitoring of the problem behavior. When a behavior is particularly serious (causing much damage or possible suspension), or when a new or aversive treatment procedure is used, there is again likely to be much attention drawn to the student, with careful monitoring in place.

Thus, the intensive assessment of behavioral problems and interventions is likely to occur. Such assessment may include repeated measure, behavioral observation across treatment conditions. This chapter will not discuss measurement techniques (see Gaylord-Ross & Halvoet, 1985; Pennypacker & Johnson, 1982), but a variety of direct recording procedures might be used which include: event recording, duration measures, time sampling, and response latency. Such direct measurement should be complimented with social validity measurement. These two measures used in the context of a treatment decision model ought to provide a powerful assessment treatment approach.

Aptitude by Treatment Interaction: Communicative Functioning

Decision models have certainly led to a coordination of assessment and intervention efforts. Yet, the decision model leaves the practitioner to collate information on an individual by individual basis. A more powerful social science would first classify individuals along some personality, behavioral, or ability/ dimension. Then, experimental research would verify that a certain group(s) along the dimension would benefit from a particular intervention and another group advance with a different treatment. This notion of aptitude by treatment interaction was originally postulated by Cronbach (1973).

The work of Carr and Durand (1984) has advanced the field of behavior treatment so that a particular aptitude by treatment interaction has been empirically established. Carr (1978) originally postulated that self-injury (and a number of other aberrant behaviors) were motivated either by positive reinforcement (gain), negative reinforcement (escape), or intrinsic reinforcement (the response itself was pleasurable). Carr and Durand expanded this notion to state that the individual was communicating both his state of affairs and his desire to move to another condition. More specifically, a person might misbehave to obtain social attention or informational assistance. Conversely, the individual might misbehave to escape or terminate the aversive demands of a teacher or a perplexing instructional task.

Interestingly, Durand (1987) has developed a standardized instrument, The Motivational Assessment Scale, which will classify severely disabled persons into gainers or escapers, when the problem behavior is serving either communicative function. The instrument is in a checklist format, and is thus relatively easy to complete. Durand has documented its fine psychometric reliability and validity.

Durand and Carr (1987) have impressively taken the final step of offering interventions which are tailored to whether the person is an escaper or an avoider. For example, a student who was emitting self-injurious behavior to escape a difficult task, was taught the communicative response of seeking instructional assistance from a teacher. The teacher modified the task so the student could succeed. By eliminating the motivation to self-injure in order to escape a difficult task, the behavior decreased. When another difficult task arose, rather than self-injure, the student communicated the need for instructional assistance to the teacher. This impressive melding of assessment and intervention will hopefully serve as a model for other aptitude by treatment interaction research in the field (Reichle, 1989). For the practitioner, the Motivation Assessment Scale should serve as a useful classification device to help design interventions.

Vocational Education

Traditional vocational assessment did not well serve persons with severe disabilities. Career education models

(Brolin, 1978) saw little work potential for persons below the level of moderate mental retardation. Rehabilitation assessment determined that most persons with moderate, severe, or profound mental retardation were incapable of nonsheltered employment. As with other outmoded forms of assessment, progressive intervention models passed it by. That is, as part of the integration movement, school teachers started training their students in real work sites. Some of this community vocational training led to permanent jobs as the student "transitioned" to the adult world. Cumulatively, more demonstrations were made with the "supported employment" model (Rusch, 1987; Wehman, 1981) showing that adults with severe disabilities could work in real employment settings. An ecobehavioral analysis (Chadsey-Rusch & Rusch, 1988) showed that, given the presence of a temporary or permanent job coach (instructor) at the work site, a severely disabled individual could learn the required job tasks and display an array of general work behaviors.

Given the demonstrated success of an ecobehavioral employment model, there still remain a number of assessment issues to be addressed. It should be remembered that social validity not only determines the behavior criteria of treatment success, it also can evaluate the appropriateness of treatment goals (Wolfe, 1978). In terms of vocational education, the question becomes what should be taught during a training experience. The main tactic is to collect information by asking consumers what they feel is important.

In this regard, employers are the potential consumers of severely disabled employees. Thus, Rusch (1982) and his colleagues have done extensive surveys of what employers feel are key work skills. An array of skills covering job task performance, general work behaviors (e.g., grooming), related social skills, and the absence of antisocial skills were reported. Some researchers have tried to determine whether general work behaviors or job task performance is more critical. Both skills appear in the employer surveys, with general work behaviors cited more frequently. Another tactic in determining task importance is to document the reasons for job termination. Greenspan and Schutz (1981) and Henley-Maxwell et al. (1985) found that job task performance accounts for approximately 40% of terminations, with up to 50% caused by general work behaviors. It appears that there is not a simple answer to this question, and educators will have to give considerable attention to both skills. Thus, the assessor will have to examine a wide range of skills from both domains. Rusch et al. (1983) has developed a standardized instrument, the Vocational Assessment Curriculum Guide, to assist in this process.

Rather than assess important vocational skills by spanning those voiced by a wide range of employers, it may be possible to identify particular skills which are articulated in one's local community. Thus, Brown et al. (1988) has developed an environmental assessment strategy for determining goals by tapping into local needs. The assessment identifies the types of employers who might hire persons with severe disabilities. The skills needed for jobs in these settings are then enumerated. Parental input is also taken regarding their expectations for employment and the skill levels and interests of their child. The assessment then recommends the kind of vocational training needed. The recommendation specifies the types of skills, settings, and materials which need to be included in training.

Probably the most valuable vocational assessment information is that obtained from previous training experiences. Gaylord-Ross et al. (1986) and Sailor et al. (1985) have recommended a "rotational assessment" procedure. That is, contemporary secondary vocational training should place a student in a series of work experiences in real employment settings. Professionals should gather information from these experiences which indicates the relative skillfulness of the student in different settings and the preferences of the student for different work settings. To accomplish this, the sequence of placements should reflect different contexts (factory, office, outdoors) and different levels of difficulty (manual and cognitive dexterity). A cumulative data base should emerge related to the abilities and preferences of the individual. This information may ultimately be used in placing the student in a permanent position upon leaving school. This vocational rotational assessment may further continue during the adult years (Lynch, 1988).

Gaylord-Ross (1987) has developed a model for the situational assessment of students transitioning into supported employment. The model includes environmental assessment and rotational assessment. It also identifies the agencies and resources which will lead to effective transition. At present, a number of school programs have passed school leavers onto adult agencies with a permanent job. The adult agency was to provide follow-up support services. Yet, when the individual is terminated from a job, the adult agency has returned the client to a segregated program rather than replace then in nonsheltered employment (Moe, 1988). For this reason, some schools have developed adult education programs which keep the graduate within the service provision of the school. Whether within-agency or across-agency transition occurs, it is important to assess the projected resources to support job placements.

Instructional support is the main type of resource needed for follow-along employment services. Supported employment has developed two types of support models, individual placement and group placement. In the individual placement a single instructor (job coach) teaches the person the various steps of the position at the work site. When the individual shows mastery, the job coach begins to gradually fade out of the work setting. Ultimately, the disabled person works independently and is under the supervision of a co-worker. In the group placement, a number of disabled workers remain under the permanent supervision of a job coach. Thus, persons with more challenging needs may be able to be retained in nonsheltered work. Even in the group model, though, the job coach attempts to fade the degree of her supervision at the work site. This may include systematic fading through distancing oneself from the client, or transferring supervisory control to other co-workers.

In both individual and group models the job coach attempts to fade her supervisory and instructional presence. It may be useful to explore assessment procedures which predict the nature of this important fading process. The assessment may document particular fading procedures which have worked with a client, e.g., time delay. It may then attempt to determine the "zone of proximal development." The zone of proximal development notion was developed by Vygotsky and has been used with mildly handicapped students (Rothman & Semmel, 1989). It attempts to predict independent performance by assessing maximal performance under intensive instructional guidance. That is, the person's maximal performance is assessed when they are receiving intensive instructional support, e.g., full physical prompts. The difference between performing under intensive and minimal prompts is the zone of proximal development. It may be useful to use this concept to assess the potential performance of persons with severe disabilities.

Social Behavior Assessment

Social behavior development may be the key benefit accruing from integrated programs. The contacts that persons with severe disabilities make with nondisabled people should lead to attitudinal changes, social skills enhancement, and an improved quality of life. It is therefore important to assess the social abilities and skills of students with severe disabilities. Such functional assessment may guide instructional programs and maximize integrated social contact and social skill development.

Unfortunately, there has been relatively little work directly assessing the social behavior of persons with severe disabilities. In spite of all of the activity related to social integration, most assessment has been in a research context, with much attention given to measuring the attitudes of nondisabled persons (Voeltz, 1980). The research evaluating social skill interventions, though, appears to hold considerable promise for functional assessment (Brady & McEvoy, 1989).

As in other content domains, the original and main work in assessment has been with standardized tests. For example, the Vineland Social Maturity Scale has been used with some individuals with severe disabilities. It provides a gross index of social functioning and is not reliable for persons with more severe disabilities. Of greater import, it provides little information for designing interventions. Some other, more comprehensive assessments have attempted to follow a developmental model. For example, the CAPE scales use the notion of developmental pinpoints to sequentially assess and suggest goals for intervention (Cohen, Gross, & Haring, 1977). Unfortunately, the CAPE has received little field dissemination or validation.

Environmental Assessment

As in other domains, some useful environmental approaches have emerged in assessing social behaviors. The environmental inventory strategy has been used to identify critical environments and subenvironments in which the student will have to subsequently perform (e.g., residential, work). These settings are then visited, with the most important social behaviors identified as assessment and instructional goals. Originally, Williams et al. (1976) and more recently Falvey et al. (1984) have exhaustively applied this environmental inventory strategy for social behaviors .

Ecobehavioral Assessment

The ecobehavioral perspective (Warren and Rogers-Warren, 1978) has provided a useful approach to functional assessment. As the term implies, ecobehavioral assessment collects information about the individual and social behaviors in the surrounding social ecology. Macdonald (1982) has applied ecobehavioral assessment to social language development and interventions. Chadsey-Rusch has developed this approach the most in its application to work settings. More specifically, Chadsey-Rusch and Rusch (1988) have identified three factors in the ecology of the workplace: physical ecology, organizational ecology and social ecology. A review of assessment and intervention variables was subsequently made. Behaviors were assessed with the social validity notion of what are normative rates of social behaviors in regular contexts. For example, Chadsey Rusch and Gozalez (1986) observed nondisabled workers in fast food settings to emit high rates of joking and teasing behaviors, but near-zero rates of positively reinforcing behaviors. This normative information could then be used to target behaviors for training, e.g., giving and receiving jokes and teasing.

Social Support Networks.

The key aspect of the social ecology is the social network of persons in the individual's life. Community-based living has at times been criticized because some individuals have been isolated, with few significant others in their lives. Loneliness and isolation are, of course, related to a low quality of life. Thus, it may be important to assess the richness of an individual's social network. If the person has few or no acquaintances in school, for example, it may lead to the establishment of a social intervention program, e.g., special friends (Campbell, 1989).

There has been a recent growing interest in the support provided by social networks. Besides offering friendship and supervisory assistance, it may provide a buffer to life stresses (Cohen and Wills, 1986). Social support research has distinguished between "perceived availability" and actual support given. Some types of social support include: instructional assistance, material gain, crisis counseling, creative inspiration, and emotional aid. Park, Tappe, Cameto and, Gaylord-Ross (1988) have developed a social support network scale for persons with disabilities (cf. Horner et al., 1986). It assesses the different types of social support just mentioned. It also enumerates the number of significant others in community, school, work and residential contexts. Thus, a lattice of the person's social network may be constructed. The questionnaire may therefore be useful as an assessment tool which identifies need areas for social intervention, as well as sectors where the person has an adequate or rich social support system.

Reciprocity is another relevant aspect of social support. Horner and his colleagues have assessed the amount of social support severely disabled individuals give to others as well as the amount of support they receive. This giving to receiving ratio is referred to as reciprocity. Horner et al. have found that nondisabled persons roughly have a 1:1 reciprocity ratio between giving and receiving. In contrast, persons with disabilities receive much more social support than they give. On the one hand, this is understandable given the support systems developed to supervise and assist persons with disabilities. Yet, this unequal ratio may reflect the dependent status and personality style of the disabled person. Thus, unequal reciprocity may indicate a need for social skills training to provide support to one's friends and associates. Such assessment intervention prescriptions have yet to be developed, but do offer exciting possibilities for ecobehavioral education.

Social skills training has undoubtedly provided the main data base for social behavior development in integrated settings. Social skills training has increased the quantity and quality of interaction between nondisabled and severely disabled persons. The training tactics have either taught a nondisabled peer to induce interactions (Strain and Odom, 1984), or trained the disabled persons to initiate and elaborate interactions (Haring et al., 1984). The research has used a variety of single case designs which had a baseline phase followed by one or more treatment phases. From an assessment perspective, the repeated measurement of social behavior in part or all of the baseline phase could be considered equivalent to a functional behavioral assessment (Hawkins, 1979). That is, educators could replicate the procedures of baseline measurement to obtain functional assessments of social behaviors.

It would be useful to enumerate some of the important features of this research. Many studies have attempted to train initiation and greeting responses (e.g., Haring, 1978). An initiation would entail approaching another person and making some gestural or verbal introduction. A greeting could be an initiation response or a response to an initiation (Odom and Strain, 1984). Nonverbal behaviors like eye contact or body posture are a second set of social responses that have undergone training. Elaborating or expanding a social exchange is probably the most important and difficult social skill. This behavior may be measured in a number of ways.

1. The duration (in seconds) of a verbal and'/or nonverbal exchange (Gaylord-Ross et al., 1984),
2. The proportion of responses given by the disabled person to the nondisabled person (Odom and Strain, 1984).
3. The number of turns taken within an interaction in a verbal or nonverbal exchange (Hunt et al., 1986).
4. The substance or topic of the verbal or nonverbal exchanges (e.g., question, share play materials).

Probably more molecular types of analysis, e.g., sequential probability analysis (Strain, 1984), would be too complex for a service delivery context. Termination is the final phase of an interaction after initiation and elaboration (Gaylord-Ross & Pitts-Conway, 1984). Terminations are statements or gestures indicating farewell at the end of an exchange.

In many ways, the topics and content of social skills training overlap with areas in applied linguistics and pragmatics. Thus, Stremel-Campbell (Gaylord-Ross, Stremel-Campbell, & Storey, 1985) outlined important linguistic behaviors that could be addressed in social skills training.

These included:

1. Protest/rejection
2. Requesting continuation of an object/activity
3. Requesting object/action or choice
4. Repeating
5. Social (greeting, thank you)
6. Calling
7. Requesting attention to self
8. Requesting attention to a referent (object, activity,event)
9. Offer
10. Answer (yes/no, what is question)
11. Request permission
12. Comment
13. Request answer
14. Give unknown information

In addition to measuring discrete social behaviors, social skills training has used social validity procedures to evaluate treatment effectiveness. Such procedures could be used as measures during functional assessment. One social validity criterion, normative rate, samples the behavioral rate of a nondisabled group to determine a goal for the performance of disabled participants. For example, Storey, & Gaylord-Ross (1987) observed the rate of positive and negative verbalizations of individuals in a pool hall in order to set criteria for a conversational training program (while playing pool) with disabled persons.

A second social validity criterion is subjective judgment. That is, a number of significant others globally rate whether a person is performing well (normal), or has improved in performance over time. For example, Forte, Storey, & Gaylord-Ross (1989) had business and special educators rate the social interactions of disabled students in a work setting. The observers filled out brief questionnaires after they observed pre- and post-training vignettes on videotape. The ratings showed that the social competence of the students improved as a function of training. Thus, social validity measures may be used as pretest measures to assess performance and assess goals, as well as posttest measures of treatment gains.

Assessment In and For the Home

In the few available published instruments for assessment of individuals with severe handicaps, such as adaptive behavior scales, attention traditionally has been given to assessment of self care skills such as toileting, handwashing, and dressing. However, making an apriori assumption that self care is a critical skill area for all individuals with severe handicaps may be a perpetuation of "readiness" models of curriculum planning. While independence in self care may enhance options for work and community living, the lack of independence need not preclude either obtaining a job or living in one's own home or apartment if other options such as hiring personal assistants are considered.

The alternative to making the assumption that all people with severe handicaps should have objectives in self care, is to use the ecological inventory process to weigh self care deficits against other skills needed for home and public environments. Earlier in this chapter, consideration was given to identifying skills needed for work placements. Prioritization of skill needs for home environments will now be considered.

Assessment to Select Domestic Priorities

Applying the "top down" curriculum planning approach delineated by Brown, Branston, Hamre-Nietupski, Pumpian, Certo, & Gruenewald (1979) to assessment planning, the first step is to consider an individual's relevant home environments. These might include, for example, a current home placement with parents, a future home placement in a supervised apartment, and respite care.

The assessment purpose for an ecological inventory is to identify those skills that are most important to participation in a given environment. This information can then be used for student assessment by noting which of the skills identified by the inventory the student does or does not have. In an ecological inventory of the home environment, the parents are the best qualified to provide this information and thus, a well done domestic assessment requires developing a parent-professional partnership as well as designing an assessment protocol to collect relevant information.

Parent-professional partnership for assessment. Parental input in the assessment and IEP development process is required by P.L. 94-142. This input is especially critical in assessing skills for the home. Research on the extent to which professionals have been successful in encouraging this involvement provides mixed reviews. For example, Salisbury and Evans (1988) found parents of students with special needs to be significantly more involved in their students education than parents of students who were nonhandicapped. However, a series of studies on parental participation in IEP development have suggested that the parents role is often a passive one (Turnbull & Turnbull, 1986). In one of these studies, conducted by Lynch and Stein (1982), differences for level of participation were found for the disability type, family life cycle stage (e.g., student's age), and cultural background. Turnbull and Turnbull (1986) suggest ways to increase active parental involvement by addressing barriers to participation such as: a) providing child care or transportation to conferences, b) becoming sensitive to cultural and language differences, c) providing information on the school program, d) negotiating the meeting to work around both parents' and professionals' time constraints, and and e) avoiding professional intimidation of parents (e.g., not outnumbering parents in meetings and avoiding the use of jargon). Since homes are where the myriad of cultural differences in our society may be most apparent, the teacher may be wise to invest time in a home visit to gain further understanding of the student's cultural heritage, as well as specifics of skill priorities.

Besides encouraging parental involvement for identifying IEP objectives and for culturally sensitive curriculum planning, the assessment process also provides the opportunity for role clarification related to domestic skill instruction. Specifically, the teacher needs to identify the extent to which parents want to be involved in teaching/assessment of the student's skills for the home. Having a child with special needs places increased stress on a family which varies depending on the child's temperament, responsiveness, and caregiving needs (Beckman, 1983). Additionally, other family needs such as economic demands or health problems, can temporarily influence the extent to which parents can be involved in ongoing instruction of skills for the home. During the ecological assessment process, the teacher may want to suggest a range of involvement from anecdotal reports of progress to participation in training of skills to clarify the extent of involvement parents prefer. When caregivers are paid staff (e.g., in a group home) rather than family members, this role clarification is especially important since home instruction may be a defined part of the staff's responsibility.

Options for skill screening. Several options exist for identifying the skills needed for the home environment and parents' current priorities. To foster involvement, using an interview format with the parent in a home visit may best meet the dual goals of identifying skills and collaborating with the family. Alternatively, the teacher might use a telephone interview or mail correspondence to gather information. The assessment protocol used to gather information might be a skills checklist, a question and answer format, a discrepancy analysis, or the parent's direct observation of the student in the home. Samples of each of these formats are shown in Table 1.

Insert Table 1 about here

From this screening, skills may be identified for housekeeping, personal grooming, meal preparation, family recreation, and so on. Sometimes further assessment is needed to specify the IEP objective. For example, parents may identify the need for the student to have some recreational skills for home. Direct assessment of several recreational options, such as task analytic assessment of using leisure materials and observations of the student's preferences, may be beneficial in selecting a range of activities to target. Wuerch and Voeltz (1982) have provided illustrations of this assessment process and specific leisure skill ideas.

Assessment for Community and School Integration

Community based instruction and public school integration have become important components of educational programs for individuals with severe handicaps. The assessment process needs to reflect the priorities of increasing students' participation in their schools and communities. This chapter cannot address the wealth of information now available on community based instruction and regular class integration. Rather, clues for the assessment process will be gleaned from samples of this literature.

School Integration

In 1975, Kaufman, Gottlieb, Agard, and Kukic (1975) proposed that mainstreaming for individuals with mild handicaps should focus on three types of integration- temporal (being in proximity with students who are nonhandicapped), academic, and social. These three forms of integration are also applicable to individuals with severe handicaps and can help guide the assessment planning. Sometimes the first step in furthering integration is to obtain temporal integration- getting students access to public schools and activities within them such as lunch in the cafeteria, extracurricular activities, and regular classes. Parents can be important allies in making the transition to temporal integration (Hamre-Nietupski et al. 1988).

Besides gaining students' access to the mainstream, this temporal integration should further be tapped to meet a student's individualized educational needs. This will require assessment for "academic" or instructional integration and for social integration. Since other sections of this chapter provide information on assessing a students' social and instructional priorities, further consideration will be given to how to relate these skills to school integration. The two components of assessment for integration planning are activity selection and problem solving for meaningful participation within activities. Ford and Davern (1989) have described several types of activities that might be targeted for within school integration such as academic classes, community based instruction with students who are nonhandicapped, alternative uses for the self contained special education classroom space, extracurricular activities, and peer networks. To get started in this activity selection, the teacher might adapt the Brown et al. (1979) idea of delineating environments, subenvironments, and activities to the school. An example of a school delineation is shown in Table 2.

Insert Table 2 about here

Once possible activities are delineated, the teacher will want to consider meaningful participation through matching IEP objectives to the setting and considering how the setting suggests the need for new objectives. This planning is also shown in Table 2 as "Integration Ideas for Sally." If possible, it would be helpful to let Sally try several of these integration ideas to observe the extent of her skill generalization, the feasibility of skill instruction in this setting in a nonintrusive manner, and to note her preferences for each. From several possibilities, the most meaningful integration for Sally could be selected.

Community Integration

Earlier in this chapter assessment for integrated home and work environments was described. Community integration also requires being able to use the array of public and business services in one's home community. The focus on using these services is often referred to as "community based instruction." Although community based instruction has been a focus in the field of severe handicaps for over a decade, Aveno's (1989) survey of community residential facilities has suggested that individuals with handicaps are significantly less involved in community activities than a comparison group of community members without handicaps. Aveno (1989) notes that social pressure to avoid public embarrassment by an insensitive public may be one factor in these diminished social excursions. Using the full range of public services in a community requires obtaining specific skills such purchasing and bus riding, which have often been the focus of community based instruction research. However, as suggested by Aveno (1989), attention also needs to be given to "blending" in public settings by teaching appropriate social protocol and avoiding instructional procedures that stigmatize the student.

Thus, assessment for use of community services might be conceptualized as having three concurrent priorities: 1) identifying skills to increase normalized use of the service (e.g., selecting a purchase), 2) identifying social skills and ways to compensate for unusual behavior for "blending" in public (e.g., keeping hands in a coat pocket as an alternative to hand flapping; using greetings in "friendly" environments like a small town store or avoiding social contact in "cool" environments like an urban elevator), and 3) assessing the impact of the student's use of the facility and teaching strategies on public reaction.

To identify skills for normalized use of the environment, an ecological inventory of ways the public uses the facility can be useful. Students with severe handicaps may not achieve independent use of the facility and thus, partial participation may be the goal. This partial participation may be most meaningful for the student if it focuses on increasing his or her choice or control in the environment (Sailor, Gee, Goetz, & Graham, 1988). For motivation, it may also be important that the response or response chain end with the "critical effect" of the activity such as consuming a purchased food item (Donnellan & Neel, 1986). Because of the wide range of community facilities, it may also be most efficient to train a generalizable response or response chain. The general case instruction methodology provides a format for this generalization planning (Horner, McDonnell, & Bellamy, 1986). This format can also be used to assess generalization deficits for IEP planning as shown in Table 3. In the example in the table, the student needs instruction across variations of doors, item displays, cashier counters, and cashier styles (e.g., stating price only, not bagging items). Concurrent instruction across the first three sites would provide this generalization training as the student had no difficulty with the variations that exist at Kate's (e.g., clerk takes items from shelf for customer).

Insert Table 3 about here

The second priority of social skills for public settings can be addressed by targeting in vivo intervention. For example, Hill, Wehman, and Horst (1982) decreased bizarre stereotypies (jumping up and down, handflapping) as well as teaching pinball skills to facilitate normalized use of a recreational facility. Similarly, Gaylord-Ross, Haring, Breen, and Pitts-Conway (1984) taught social interactions as well as leisure material use to facilitate social integration in a high school setting. Determining which behaviors or behavioral deficits will create problems in public cannot always be inferred from school based observations. In vivo assessment to compare the student's behavior to those typical for his or her age group as illustrated by Browder (1986) may be the best approach to identify discrepant skills for social blending.

The third priority of assessing public reaction focuses on assessment of the setting rather than the individual to improve blending of the student and/or instructional strategies. To assess public reaction either the general public or store employees might be informally interviewed or "polled." For example, Phillips, Reid, Korabek, and Hursh (1988) gave a questionnaire to store employees to assess the acceptability of community based instruction to teach language skills. An alternative is to have an acquaintance observe the student and teacher from a distance noting what behavior gets stares or comments from the general public. In an observation of this type conducted by a supervisor who pretended to be unacquainted with the student and teacher, stares and negative comments occurred when the teacher unzipped the young man's coat. To strangers seated across the restaurant, the scenario appeared to be an intimate exchange of one adult undressing another in public. The negative attention was easily avoided by having the student keep his coat on as did many of the customers in the facility.

Assessment of Related Skills: Communication, Motor Skills, and Functional Academics

In the developmental model of curriculum development often used in preschool education, content areas for instruction include communication, fine motor, gross motor, cognitive skills, and preacademics. The influence of this model on the education of individuals with severe handicaps is apparent when these content areas are the instructional focus out of context of daily activities. For individuals whose priorities are skills for increased community integration (i.e., "life skills"), communication, motor, and academics may be viewed as "related" to activities of daily living. Brown, Evans, Weed, and Owen (1987) describe routines for assessment according to core skills (i.e., the daily living skill per se) and skills which enhance or enrich the routine. A student with severe handicaps may be able to learn core skills for a routine like grocery shopping or meal preparation with no change in her current communication or motor competence. However, if taught in the context of these activities, related skills such as communicating menu choice and grasping small objects may enhance the student's independence within the activity and may have generalizable benefits to other activities requiring choice or grasp. One such enhancement may be to teach the student to express preference or choice in the context of daily routines (Houghton, Bronicki, & Guess, 1987). Thus, one way to identify related skills that are "functional" to activities of daily living is to select the core skills first and then review these skills to identify related skills that can enhance or extend the activity.

A second approach is to assess the student's competence using a skill sequence for communication, motor, or functional academics and then schedule selected skills across activities for generalized use. For example, in the Individualized Curriculum Sequencing Model (Mulligan, Guess, Holvoet, & Brown, 1980) targeted discrete responses such as reaching and grasping, selecting a choice, and maintaining head control might be taught within several daily routines such as grooming, snack preparation, and leisure activities. The ICS model has been shown to promote generalization of targeted skills to novel activities (Bambara, Warren, & Komisar, 1988). The difference between the ICS model and the developmental curriculum model is that the related skills are: 1) efficient and appropriate for the student's age- not necessarily the next language or motor skill in normal development and 2) taught in the context of age appropriate activities-not "communication lessons" or "motor lessons."

For language and motor skills it is also important to develop assessment in collaboration with speech, occupational, and physical therapists. Sometimes the therapist may have greater expertise in identifying the most efficient "form" to be taught (e.g., picture wallet, use of a walker) and the teacher may have more expertise in the "functions" to be taught (e.g., using the wallet to place an order in a restaurant; use of walker to get to cafeteria). However, in multidisciplinary programming both therapists and teacher should discuss both aspects of skills to be taught. Even when related skills instruction is "therapeutic" incorporating them into skills of daily living is feasible and enhances generalization. This integration of therapeutic services for related skills can even be incorporated in community based instruction (Rainforth & York, 1987). Thus, the assessment of related skills requires identifying target responses and planning ways to incorporate the skill instruction in daily routines.

Table 4 illustrates the two methods for assessment of related skills. In the first, skills are selected from review of daily routines. In the second, skills from a sequence are planned into daily routines for generalized use.

Insert Table 4 about here

The Dynamic Assessment of Persons with Severe Disabilities

The limitations of standardized assessments and inventories have been pointed out. Such traditional notions of assessment have been replaced with functional, environmental approaches. While environmental assessment well serves the practical needs of educators, we may ask whether more interesting assessment models may be designed. By interesting, we refer to the earlier notions of assessment that refer to abilities which cut across tasks and circumstances. Such notions of assessment pertain to the key issue of generalization. That is, while the community-referenced training movement has been based on the premise that it would induce superior generalization, relatively little data has been accumulated showing across setting generalization (cf. Horner et al, 1985). What might be occurring is Stokes and Baer's (1987) notion of "sequential programming." That is, the person is merely retrained anew in the subsequent work setting with few transfer effects resulting from previous work experiences. Controlled research will determine whether this null hypothesis may be confirmed or rejected. It may also be useful to apply an assessment approach to examine generalization and other dynamic properties of learning.

A Proposal for Dynamic Assessment

A dynamic assessment centers around the four phases of learning (Haring & White, 1978): acquisition, production, generalization and maintenance. While it could be used in conjunction with environmental assessment, it does not emphasize the content of performance.

The individual must first demonstrate acquisition learning. To avoid floor or ceiling effects, a task of intermediate difficulty would be selected. On repeated probes the person would perform at the 40-60% range. Tasks that are viewed as functional in a person's life would be preferred. Next, effective cues and consequences would be identified. They might be selected from previous work, but they should be validated as part of the assessment. A procedure such as Striefel's (1978) might be used to identify powerful reinforcers. Next, a systematic instructional program would be implemented. The program would include effective cues and consequences, as well as a task analysis. Repeated trials and sessions would be run until some learning criterion (e.g., 100%) was reached. The graphed data would indicate a "rate of learning" curve. Further validation would be provided as to the effectiveness of particular cues and consequences. Adaptations that were needed to reach criterion would be noted. If criterion could not be reached, implications for partial participation (Baumgart et al, 1981) would be stated.

Production assessment would proceed after acquisition assessment. A task would be identified which could be performed at a faster rate and/or for a longer duration. Preferably, the acquisition task would be used, unless it was felt there was no room for improvement in production dimensions. As in acquisition assessment, effective cues and consequences would be identified. Then, a production, instructional program would be written and implemented. Contingent reinforcement and prompting techniques would be used to increase rate or stamina. The acceleration in production across training sessions would be graphed and noted. Effective production procedures would be highlighted.

Next, a generalization assessment would be conducted. The task used in the acquisition or production assessment would be presented to the student. The task would be presented in a different setting (or subsetting) and by different people. For example, if the student had to stack lunch trays in the school cafeteria during acquisition and production, he could be taken to the faculty cafeteria to do the same task. If perfect generalization did not occur on the probe trial, repeated training trials would be conducted in the generalization setting until criterion had been reached. Generalization performance would be reported in terms of the number of training trials to criterion, or in a similar metric. Again, the degree of generalization and effective techniques to promote generalization would be reported.

Finally, after three months have passed since the last training session, a maintenance assessment would be conducted. The acquisition and production task would be presented in the criterion setting. If criterion performance were not displayed, a series of booster training sessions would be conducted until criterion errors reached maintenance performance (trials or sessions to criterion). Again, techniques to facilitate maintenance would be noted.

Content Considerations

Data and information gathered from a single task across the different phases of learning would be synthesized and present a profile of a particular learning style. Useful information related to effective teaching techniques should emerge. Still, it could be pointed out that information from a single task or content domain may not be reliable nor accurately reflect the total ability repertoire of the individual. Therefore, the functional assessment procedure needs to be replicated on several other task domains. This would insure the representativeness and ecological validity of the assessment process.

The important task domains may vary according to professional philosophy. A common set of functional domains has been personal management, vocational, social/leisure, and community. Other relevant domains might be academic and residential. Domains articulated from a developmental framework have been communication and motor. Four domains should be selected for the dynamic assessment. The four phase assessment (acquisition . . .) should be replicated in each of the four domains. Preferably, tasks from the student's IEP would be selected for assessment. This would integrate the assessment - curriculum intervention process. It would increase the chances of assessment recommendations being followed in teaching practice. Furthermore, since assessments are typically mandated, it would force the teacher to participate in data-based, systematic procedures. This participation might spill over into actual teaching practice throughout the year. Thus, the problem of quality teacher practices, addressed above, might be rectified through dynamic assessment.

Most importantly, the dynamic assessment presents a profile of the learning characteristics of the individual. When there is a consistency of learning style in performance across task domains, clear information may be provided about:

1. the rate of learning in the different phases;
2. the amount and types of instructional support needed to facilitate learning;
3. the ability of the student to generalize across settings, persons, and materials.

When little or no generalization occurs with a variety of procedures, a sequential programming strategy might be inferred. If substantive generalization appears, the types of transfer strategies which work (e.g., sufficient exemplars, general case) may be noted.

When there is inconsistent replication across task domains, a more complex interpretation will result. For example, a student may show impressive generalization on one task and little generalization on three others. Such an effect would indicate the "potential" for generalization and prompt a further inquiry into what promotes and what deters transfer of learning.

Dynamic assessment is thus an ongoing process which portrays and inquires about learning styles and effective instructional procedures. In addition, when there is little evidence of generalization or independent functioning, there may be an indication for an intense service delivery system, e.g., group supported employment placement, where continued cues and consequences are provided by an instructor.

The proposed dynamic assessment approach is in a schematic form. There is a need for its further conceptual development and field testing. We feel this effort would be worthwhile, since it would move the current state of functional assessment beyond its content-reference form. The predominant integration movement assumes a degree of generalization of training results across community-referenced environments. The proposed dynamic assessment would key training efforts to individual learning styles and practical instructional decision making.

Consideration for Practice

The dynamic assessment of students with sever disabilities is intended to improve educational practice in a number of ways. As has been stated, it should gather critical learning style data related to generalization assets and deficits. The assessment might identify generalization strategies which work, and thus provide strategies for teachers. It may also identify areas of need where generalization skills ought to be learned. In addition, by conducting such a dynamic assessment, it may force some teachers, for the first time, to address issues of generalization and maintenance, as well as data based instruction. Dynamic assessment may thus indirectly improve teaching practice.

It should be noted that our suggestion for dynamic assessment is not a call for the resuscitation of ability constructs which are highly inferential and focus upon the deficits of the disabled individual. Rather, the assessment process is quite pragmatic in having educators collated past and current instructional data from functional tasks. Furthermore, we do not expect stereotyped generalizations about he student to emerge which would stigmatize or suggest separate (segregated) placements. Rather, practiced learning and teaching strategies might emerge which would favorably impact the pupil's future education.

Summary of Assessment for Skill Selection

The tradition of assessment in special education has been to identify innate ability or traits of individuals through use of instruments such as the IQ test. This approach is losing credibility as the advantages of behavioral assessment for educational planning become apparent. For individuals with mild handicaps "curriculum based assessment" to pinpoint academic objectives and document service need is the current assessment trend (Shapiro & Kratochwill, 1988). In developing assessment for individuals with severe handicaps, it is also important to focus on the outcome of educational planning. Ability and train assessment has often been an excuse for denial of service to this population. Even current skill level may not be relevant if the outcome objective is supported employment and community living since these are now viewed by many as "rights" rather than privileges to be earned through skill acquisition.

For individuals with severe handicaps, there is no established curriculum for "curriculum based assessment" for educational planning. Although some are emerging, such as the Impact Curriculum as described by Donnelan & Neel (1986) may lend themselves to future curriculum based assessment, the current "best practise" is to identify an individualized life skills "curriculum" through ecological inventories and use these skill lists for skill screening of the student using teacher made informal assessments (e.g., See Table 1). This can be a time consuming and arduous process for teachers and resources such as published curricula, activity catalogs, files of ecological inventories for a community, and published skills checklists may expedite the process. Our dynamic assessment proposal offers an efficient and curricular-referenced approach to this process. Through dynamic and domain assessment approaches, teachers may be able to accurately assess both their communities and their students to achieve the goal of developing IEPs that enhance community integration.

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Table 1. Examples of Methods to Assess Current Home Skills in Cooperation with Caregivers

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Example One: SKILLS CHECKLIST

Directions: Please check how well Sally performs each of the following activities. If Sally's performance varies, check which is typical (most frequently observed). Star (*) items most important to you.

Ratings - 1 Independent, no help needed

2 Semi-independent, occasional reminders, help needed

3 Partial paticipation performs some components of task without assistance

4 No skills yet in this activity

____ 1. Bathing

____ 2. Hair grooming

____ 3. Meal preparation

____ 4. (and so on)

Example Two: QUESTION/ANSWER Format

1. What does Sally do for herself, or do to help you, with her routine of getting a bath? What would you like for her to learn to do?

2. Tell me about the family's mealtime routine and Sally's typical activities during meal preparation.

   a.

   b.

   c.

   d. (and so on)

Example Three: SCHEDULE DISCREPANCY ANALYSIS

Directions: Please note the care you usually provide for Sally at each of the designated times and the skills Sally performs alone. Under "discrepant skills" list anything you would like for Sally to learn to do as part of this caregiving routine. Star (*) your top priorities.

TIME/ACTIVITY	CAREGIVER	SALLY	DISCREPANT SKILLS
7:30 Wake Up	Wakes up Sally	-	Respond to clock
8:45 Bathroom	Toilets Sally	Sits alone on toilet	Approach toilet*/ Pants up & down
8:00 Dressing	Dresses Sally	Points to choice of shirts	Other dressing choices Dressing skills
(and so on)			

Example Four: DIRECT OBSERVATION

Directions: Note level of assistance needed for each skill in each routine. Levels of assistance: V - verbal cue to begin/finish. VV - repeated verbal directions to perform task, M - model, PP - partial physical guidance, P - full guidance, X - does not do. Put a star (*) by each skill that is your priority for Sally's next IEP

ROUTINE: Preparing for School Bus

		MONDAY	TUESDAY	WEDNESDAY
__*__	1. Put coat on	P	P	P
_____	2. Put hat on	VV	V	X
_____	3. Grasp & carry bookbag	X	X	X
__*__	4. Walk to bus	P	P	P
ROUTINE: Afternoon snack				
_____	1. Get out food for snack	X	X	X
_____	2. Pour drink			
(and so on)				

Table 2. Environmental Delineation to Identify School Activities for Integration

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Site: Farmer Elementary School

Environment: "All Purpose" room (Cafetorium)

Subenvironments: Stage, large room, kitchen

Subenvironment Priority: large room

Activities of students from regular classes

1. Breakfast program
2. Lunch
3. Assemblies
4. Peer instruction in reading by Ms. Brown's class on Wednesday at 2:00 PM
5. Help the custodian clean up

Integration Ideas for Sally

1. Social greetings (IEP objective) and listen to peer-instructed story reading
2. Communicate likes/dislikes (IEP objective) while attending assemblies with peer from peer network
3. Open lunch box (IEP objective) and eat with Ms. Jones' 4th grade lunch
4. Share pictures of rock groups and new fashions to participate in lunch conversation (new IEP objective suggested by observation of 4th graders at lunch)

Table 3. Example of General Case Assessment for One Item Purchase

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Instructional Universe: Convenience stores in Lehigh Valley, PA

Generic Responses[1]

Generic Responses	Sites to Sample S-R Variation				Stimulus/Respons Generalization Deficits
	Penn Supreme	Nick's	7-11	Kate's	
1. Enter store	+(electric door)	-(push)	-(pull)	-(push)	push/pull door
2. Locate item	-(multiple aisles)	-(display case)	-(aisles)	+(behind clerk)	scan aisles & cases
3. Pick out item	+(bottom shelf)	-(open case)	-(top shelf)	+(clerk selects)	shelf location & opening case
4. Take item to counter	+(large counter)	-(small counter)	-(small counter)	N/A	size/location of counter
5. Wait in line	+	+	+	N/A	mastered
6. Pay cashier	-(clerk states price)	+(clerk extends hand)	-(clerk states price)	-(clerk states price)	verbal cue
7. Take change/ item	-(change w/ no bag	-(no bag)	-(change & bag)	+(bag)	unbagged item change cups
8. Leave store	+(electric door)	-(pull)	-(push)	-(pull)	push/pull

TOTAL	5/8	2/8	1/8	3/6
Date of Probe	Nov 3	Nov 10	Nov 12	Nov 15

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[1] See Horner et al. (1986) for illustration of defining the stimulus and response variation not shown here.

Table 4. Related Skills Assessment

Method One: ENHANCE DOMAIN ACTIVITIES

Routine	Potential Related Skills to Assess
1. Meal preparation	Motor: Reach & grasp; operate blender with switch Verbal: Communicate menu choice; ask for help Academic: Count measures

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Method Two: ASSESS RELATED SKILLS SEQUENCE AND BUILD INTO FUNCTIONAL ACTIVITIES

Skills Sequence	Ideas for Functional Use
+ 1. Palmar grasp	(mastered)
+ 2. 3 Jaw chuck	(mastered)
- 3. Pincer Grasp	Coin use for vending machine; buttoning

OR

Skills Sequence Assessment Results	ICS Activity Ideas
Communication: Point to choice	1) Cooking - choose food, grasp utensil, head up to view preparation
Motor Maintain grasp. Hold head up.	2) Gardening -- choose plant, grasp plant, grasp watering can, head up to look at plant

Robert Gaylord-Ross

The Role of Assessment in Transitional, Supported Employment

Given the many newly appearing supported work programs to secure employment for disabled youth and adults, the question may be raised as to the role of assessment in the supported work process. Assessment has always had the multiple objectives of describing overt skills, inferring underlying abilities, predicting future performance, and suggesting instructional strategies and curriculum. A number of standardized vocational assessment instruments have attempted to generate individual profiles of vocational performance and potential. Since severely disabled individuals are the primary target group for supported employment, most would not be able to complete the tasks or meaningfully participate in the administration of these tests.

AN ENVIRONMENTAL APPROACH TO ASSESSMENT

A functional approach to assessment entails the identification of the environmental demands of particular work settings and relates them to an individual's characteristics. Chadsey-Rusch (1985) and Foss, Bullis, and Vilhaeur (1984) have advanced environmental models for analyzing vocational performance. Gaylord-Ross and Peck (1984) have stated that a comprehensive portrait of a severely disabled individual may be obtained only by collating observations of that person in several settings. In supported employment assessment, it is useful to identify environmental characteristics, demands, and resources of potential work settings. Second, information should be applied from the individual's previous vocational experiences. Third, a placement decision must be made by judiciously pooling environment and individual data. Fourth, assessment information must be used to maintain the employment successfully. Thus, environmental assessment draws from the notion of Brown, Nietupski, and Hamre-Nietupski (1978) of keying instructional strategies to the context in which the individual must ultimately perform.

DIMENSIONS OF SUPPORTED EMPLOYMENT ASSESSMENT

In addition to emphasizing environmental demands, supported employment assessment should use a formative, repeated-measures approach to collecting individual data. It is felt that singular, summative measures (Gaylord-Ross, Forte, & Gaylord-Ross, in press) are not reliable. The behaviors of people with severe disabilities or other serious vocational handicaps are highly variable. An accurate indication of vocational performance can only be attained through repeated observation over days, weeks, or months.

Secondary Vocational Performance

A critical individual data base for assessing transition to supported employment is the student's experiences in work settings during the secondary school years. Fortunately, work experiences have become quite common for mildly handicapped students (cf., Brolin, 1982), and they are becoming increasingly prevalent among students with severe handicaps (Gaylord-Ross, Siegel, Park, & Wilson, in press; Pumpian, in press; Sailor et al., 1986). Supported employment assessment for youth in transition will benefit greatly when data are available from secondary work experiences.

The first things to examine in the secondary school data base are what types of tasks and in what types of work settings the student excelled. Performance may be examined in terms of acquisition time to learn a new task(s), accuracy in performing tasks, production rate for a set of tasks, and duration or stamina in performing certain tasks. Employers, coworkers, and teachers may also rate student performance.

Inferences may then be drawn about the types of work settings and tasks a student excels in or has difficulty with. For example, a student may do well in repeated assembly tasks, sitting in a factory setting, with little social interaction with others. The same student may do poorly with heavy manual tasks, working outdoors, and where there is much socialization among coworkers. This information should prove valuable when making placement decisions.

A second use of secondary work experience data is in determining the occupational preference of the student in transition. Disabled youth often have unrealistic beliefs about their future occupations (Sacks & Bullis, in press). Taking a vocational preference inventory without having previous work experiences may only formalize these limited or unrealistic expectations. A series of work experiences lets the student contrast the feelings of, for example, working outdoors versus working in an office; working on fine motor tasks requiring much concentration versus general maintenance tasks with gross motor movements.

Assessment and Placement

The assessment of placement possibilities is a complex process because of the need to simultaneously gather information about work sites and cross-reference it with particular individuals approaching employment.

When contacting employers during job development, the following information should be obtained:

1) General job description
2) Difficulty of new tasks to be learned
3) Production rate demands
4) Tolerance for errors
5) Duration of work: hours per day, work time before break, length of time on work tasks, overall stamina requirements
6) Accessibility of work site, for wheelchairs and by public transportation
7) Attitudes of employer and coworkers toward employing disabled persons.

This information is usually obtained in a job analysis. It can be generated by reading documents, observations, and interventions. The most reliable source of work site information, though, is how other disabled persons performed at that site.

After information has been gathered about potential sites, it should be cross-referenced with a list of persons to place. The task is to match individual abilities and preferences with job requirements. A student's secondary school training experiences may be valuable for completing this process. It may be necessary to consider the types of physical adaptations needed and the job requirements at a work site.

Assessing Resources for Supported Employment

Even though a placement site has been matched with an individual, more information is needed to assess whether the job placement is truly feasible. An assessment of the resources available to facilitate transition to work is critical. The first step in resource assessment is communication with the person's parents or caregivers. Home assessment should start as soon as placement for permanent employment is being seriously considered. An indication of family support for their handicapped youth being employed should be obtained. Gaylord-Ross, Gaylord-Ross, Hagie, Musante, and Jameson (1985) found that when caregivers are actively resistant to the employment of their child, it is quite likely that the placement will fail. Besides caregiver commitment, home assessment should gather information concerning parent knowledge and need for information about the employment process. Information about transportation to and from the work site is critical. The ability and willingness of caregivers to adapt their transportation schedules must be determined. Parents' knowledge of fiscal and service shifts as their child leaves school and enters adulthood should also be determined. The assessment of home knowledge and commitment toward employment can set the occasion for supported employment inservice training with caregivers.

A key resource assessment question is how funding and services will be delivered to the disabled youth who works. If a public school is initiating the supported work training, will that agency continue with long-term follow-up or will follow-up be turned over to another agency, such as Vocational Rehabilitation? Similarly, if initial training is provided by Vocational Rehabilitation, will that agency provide life-long follow-up, or turn the case over to another agency after a specified time? When designing an individual transition plan, assessment of the changes in service delivery must be obtained.

In addition to assessing the continuation of services for supported employment, information must be gathered about the total service plan for the youth in transition. Halpern (1985) has pointed to the importance of attending to community living and social network variables as well as employment or the disabled youth in transition. Thus, assessment information must be gathered about the type of day programs and recreational activities a youth may participate in as he or she leaves school.

Assessment of On-the-Job Performance

When a handicapped youth is first placed on the job, there is a need to immediately assess work performance, particularly in competitive employment where a supervisor will determine within the first few weeks whether the employee should be retained in that setting. An indication of the person's accuracy and degree of assistance needed in performing the job tasks can be obtained from a job task analysis (cf., Gaylord-Ross, Gaylord-Ross, Hagie, & Jameson, 1985). A work sample of production rate may be taken by calculating the number of units (tasks) completed in a standard unit of time (e.g., 12 trays of food set per hour). A work sample of stamina (duration) can be taken by recording the number of minutes a person successfully works on a task before stopping or slowing down. Accuracy, rate, and stamina work samples should be repeatedly taken over a series of work days. The graphic plotting of these data can indicate whether the employee is improving and whether a new kind of instructional intervention is needed to elevate performance.

A second aspect of assessing initial job performance is social validity. That is, it is not sufficient for the competitively employed youth to improve accuracy, rate, and duration; the standard must at least equal that of the nonhandicapped coworker in the same position. Thus, on-site assessment must obtain normative data on the accuracy, rate, and stamina of nonhandicapped coworkers. These data may be obtained by interviewing the supervisors and actually observing and recording the performance of nonhandicapped employees.

Supervision, job sharing, and retention

During the initial weeks of employment it is important to assess the social ecology of the workplace. In competitive employment the handicapped worker must ultimately work alone without the presence of educator support. In enclave circumstances, the educator will try to figure out ways of socially integrating individuals with nonhandicapped coworkers. Thus, there must eventually be a transfer of stimulus (supervisory) control from the educator to one or more of the nonhandicapped workers. As the educator fades out of the work setting, supervision must be turned over to specific coworkers. Assessing or predicting this development is difficult and needs experimental research (Touchette, 1986). During the initial weeks of employment, the educator can identify coworkers likely to take over supervision. Sample trials across work days may be run with different coworkers delivering cues and consequences. This will help determine how well the coworker can manage the handicapped individual and how well the latter responds to different coworkers. Such formative assessment data can help the educator plan for systematic transfer of supervisory control.

Another assessment consideration is the type of job adaptations that may be needed to assure worker success. A handicapped worker may be able to perform only 11 of 13 required job tasks for a specific work role. On-site assessment can determine what job tasks the person is not likely to perform successfully and identify coworkers who would be willing to enter job-sharing arrangements. In job-sharing agreements, a nonhandicapped coworker performs the job tasks that the handicapped worker cannot do. In turn, the latter spends more time performing tasks he or she can complete. Job-sharing arrangements may be critical to job retention.

Work-site assessment is important in planning for a number of training procedures, as well as for communicating with the work-site supervisor. The initial repeated-measures performance data can graphically show the supervisor how the handicapped employee is progressing and where further improvement is needed. If there is a threat of negative termination, the educator can share the data with the supervisor and point out employee progress in particular areas. The two might jointly set performance goals so that the handicapped employee will improve. Such joint planning involves the supervisor in the employee's success and buys time for the educator to change behavior. Buying time is often critical; the longer a handicapped employee can stay on the job, the greater the probability of retaining the job.

SUMMARY

Important factors in assessing a person's performance in transitional, supported employment have been described. The approach does not prescribe a particular summative measure. Rather, a series of formative indicators are collected and interpreted. The total assessment process attempts to guarantee successful job retention and positive life experiences in both work and community living domains.

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Factors Associated with Employment Success among Youths with Learning Disabilities*

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Running Head: EMPLOYMENT SUCCESS AMONG YOUTHS WITH LEARNING DISABILITIES

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Abstract

A follow-up study examined the employment success of young adults with learning and other mild disabilities. A qualitative study questioned the employee with disabilities, his or her parents, and the employer on a number of vocationally related items. A four-factor model was advanced to explain job success. The factors included: job match and accommodation, social acceptance, work attitude, and special services. Participants in a total of 41 job situations were queried with 38 completed triads (employee with mild disability, employer, family). The method of constant comparative analysis was used to analyze the data. Although an aggregate of the four factors correlated significantly ($p = .01$), job match proved to have the most significant ($p = .01$) relationship with the outcome variable. The results were interpreted in light of the need to deliver and understand the types of supported employment services for adults with mild disabilities.

Factors Associated with Employment Success among Youths with Learning Disabilities

For many of our nation's young people, vocational success is impeded, not by lack of opportunity or desire for success, but by their failure to meet the demands of the work world. Hundreds of thousands of youths with limited abilities to reach the standards of attendance, grooming, social behavior, and job performance do not experience job success and career development. Many of these young people have been identified while in school as having a learning or other mild disability. And in many instances the learning and behavior problems associated with their time in school have endured and follow them to the work world. In other instances, the so-called disabilities have been left behind, and they experience employment success. The purpose of the present study was to investigate job accommodations for employed youths with mild disabilities and to develop and test a four-factor theory associated with employment success.

Job accommodation is any modification of a job situation that enables a worker who would not otherwise be able, to perform the requisite tasks. The history of job accommodation includes diverse events, for example, the introduction of rubber soles that permit a worker to stand for longer periods of time; computer technology that can provide physically limited persons access to the information workplace; autonomous work groups that offer a more flexible human environment and a redistribution of labor relationships; and counseling of employees with mental health problems. In the literature of people with disabilities in the workplace, accommodations are defined as adapting the work environment and location; retraining or selectively placing a worker in a job that needs no accommodation; providing transportation, special equipment or aides; redesigning a job; or re-orienting or providing special training to supervisors and co-workers (Berkeley Planning Associates, 1982).

Follow-up studies can be sensitive to the impact of job accommodations, but follow-up studies that report on individuals with learning or other mild disabilities usually investigate the durability of the disability rather than vocational outcomes (Horn, O'Donnell, & Vitulano, 1983). Among individuals with disabilities, persons with mental retardation have more frequently been the participants of follow-up studies (Harnisch, Chaplin, Fisher, & Tu, 1987; McCarver & Craig, 1974; Siegel, Park, Gumpel, Ford, Tappe, & Gaylord-Ross, 1989). Investigators often limit their observations to services identified by a label or look only at general sociological conditions when searching for factors associated with job outcomes (Catterall & Stern, 1986; Cohen, 1985). Studies with the intent of explaining school or vocational failure rarely provide constructive suggestions for new approaches to service delivery (Denton, 1987), and job accommodation is commonly assumed to mean hardware or job modifications that serve persons with sensory, physical, or intellectual impairments (Gugerty, 1981). The employment experience of youths identified as having mild disabilities is clearly in need of closer scrutiny.

The hypotheses and methods of the present study were based on the notion that there may be factors that correlate with vocational success among youths with mild disabilities, but that only a more ecological approach will successfully identify the sources of those factors. For example, the support for a youth to make the decision that work and a career are worth pursuing may come from a family member, a co-worker, or be self-generated. The accommodation that enables successful job performance may come from the family, the employer, or be self-implemented. The special service that creates an appropriately matched job opportunity may be provided by the school, a public agency, or a community organization.

The present study made an empirical assessment of the following hypothesized factors: (a) willingness and ability of the employer to make job accommodations, that becomes less critical as the job match approaches ideal; (b) rationalization for going to work made by the youth, and/or support from the family; (c) social acceptance on the job; and (d) special programs and services that expose a young person to the work world. Hence, the present study investigated job situations in a manner that allowed for a whole or parts of a system of factors to be correlated with vocational success.

Method

Instrument

Some questions in the survey questionnaire were taken from other instruments and adapted for the purposes of the present study. The majority of those questions pertaining to work history were taken verbatim from the National Longitudinal Survey of Labor Force Behavior: Youth Survey, 1979. The purpose of these questions was to develop a coherent and complete picture of the job history, job descriptions, and working conditions in the the job situations.

Questions regarding social acceptance on the job were adapted from a study examining co-worker approval of disabled students in a work setting (Forte, Storey, & Gaylord-Ross, 1985). Questions dealing with work rationalization, work ethic and family support were original, and conceptually based on the findings of Kernan and Koegel (1984), Rose (1985), and Sengoku (1985). Questions on accommodations were compiled from the authors' experiences and several investigations (e.g., Hill, Wehman, Hill & Goodall, 1985; Montague, 1988).

A panel of seven experts in personnel rehabilitation and psychometrics reviewed a draft of the instrument. Their comments led to a revised second draft of the instrument. The panel included two professors with specializations in vocational special education and social skills training; a statistics and research consultant to the California State Department of Education; a personnel specialist with a national auto insurance company; an education professor who specializes in youth labor market and vocational education research; a professor of management who specializes in personnel law; an education professor who specializes in survey research and measurement; and a rehabilitation consultant who specializes in accommodations for employees with learning disabilities.

The instrument was field tested with three graduates of secondary SLD programs. The individuals came from the same school district as the participants in the primary study. Based on these interviews, particular items were modified, deleted, or added in order to improve the content and clarity of the instrument. For example, some items were prompting redundant information, others were creating tension in the interview. These were deleted, while others were rephrased for clarity and ease of response. A copy of the instrument may be obtained from the first author.

Participants

Youths were randomly selected from lists of students with mild disabilities whose records indicated that they had exited the San Francisco Unified School District or San Francisco's nonpublic schools between the years of 1985 and 1988. The list included 731 students from classes for the Emotionally Disturbed (SED), Educable Mentally Handicapped (EMH), Resource Specialist Programs (RSP), and Specific Learning Disabled Programs (SLD). These students have been classified as learning disabled or emotionally disturbed according to the guidelines of the San Francisco Unified School District[1]. A sample of 208 individuals were randomly selected and contacted by letter and telephone.

Those students for whom a family and an employer source of information could be located were included in the study, if all three sources gave consent. The sample included only those youths who had been employed for at least three months since exiting secondary school. Thus, the participants in the survey included those students who had at some point been employed, their employers, and their families.

Sampling Results

Of 208 potential participants, 97 (47%) could not be contacted (no longer at phone number, no forwarding number, 47; telephone disconnected, 27; letters returned by post office, 12; and phone messages not returned, 11). Of the remaining 111 (53%), 6 were attending college, 17 were unemployed, and 9 were working, but always for less than three months. Others were out of the labor force for reasons of pregnancy (1), death (2), or institutionalization (1). Seven had not yet graduated school and an additional 7 had left the area. In summary 50 persons (45%) of the 111 contacted by letter or telephone were disqualified from the sample for circumstantial reasons. The overall find rate of 53% is comparable to those reported by Zigmond and Thornton (1985) and deBettencourt, Zigmond, and Thornton (1989).

Of the remaining 61 persons, 30 refused to participate, and 31—15% of the 208 potential participants—agreed. Our sampling procedures, which took many months, confirmed other reports about the transiency of this population (Edgar, 1988), and reluctance to self-identify as an individual with a disability.

In order to increase our sample size, we obtained agreement from 10 individuals who participated in a transition program for youths with mild disabilities (Siegel, Greener, Prieur, Robert, & Gaylord-Ross, 1989). These youths are representative of the population identified as having mild disabilities. The age, sex, ethnicity, and disability profiles of these ten youths are consistent with the demographics of the original 31 participants. The program recruits from all high schools in an urban area, and from all SED, RSP, and SLD classes. In all, 40 family interviews, 41 employer interviews, and 41 former student interviews were conducted, comprising 38 complete "triangles" of job situation interviews, out of a possible 42. In four situations, one party ultimately declined to participate.

Of the 41 participants, the median age was 20 years and 4 months (range = 18-11 through 23-4). There were 26 males and 16 females. Ethnically, 12 were White, 17 Black, 7 Hispanic, 2 Chinese, 2 Vietnamese, 1 Filipino, and 1 Japanese. The subgroup of the ten additionally selected participants comprised 6 males and 4 females. Three were White, 5 Black, 1 Chinese and 1 Hispanic.

School records were located for 40 of the 41 participating former students. Thirty-two of them were classified as Specific Learning Disabled, four as Educable Mentally Handicapped, three as having a Severe Disability of Language (Aphasic), and one as Severely Emotionally Disturbed. Resource Specialist Programs served 25 of the participants, and the remaining 15 attended Special Day Classes. All of the participants graduated except one, who dropped out in January of 1985. One graduated in 1988 (but worked part time during his last semester), 16 in 1987, 14 in 1986, 8 in 1985, and 2 in 1984.

Of the 33 youths for whom WRAT (Wide Range Achievement Test) results were available, the reading scores ranged from 2.8 grade level to 12.0, the median score being 6.4, and the standard deviation 2.2 years. WRAT math scores were obtained for 32 of the youths, whose scores ranged from 3.0 grade level to 10.9, the median score being 5.2, and the standard deviation 1.94. The scores were obtained during the junior year of each of the participants' secondary education.

Family incomes were obtained for 32 of the participating families, and for two former students who lived on their own. This income ranged from $0.00 per month to $6,000.00 per month, with a median of $2,193, a mean average of $2,454, and a standard deviation of $1,453. The earnings of the 41 participating former students ranged from $0 to $2,232 per month, with a median income of $856, a mean of $842, and a standard deviation of $464.

Although all 42 of the job situations met the criterion of having employed a former student for over three months, at least 20 (48%) of them had been terminated from the job or quit under negative circumstances by the time the study had been concluded. Thus, at the time of the study, only 52% of the participants were employed by the same employer. One had left his job in order to attend college full time, and only one other had left for what was clearly a better-paying job opportunity. Nineteen (46%) of the 41 participating former students had held only one job since graduation, nine (22%) had held two, five

(12%) had held three, six (15%) had held four, and two (5%) had already held five different jobs.

The 41 participating employers reported that 19 (46%) of the job situations were for jobs that were under 35 hours a week, and 22 (54%) were for jobs between 35 and 48 hours per week. Table 1 shows the job titles of the 42 job situations. The most common job was busperson (5), followed by fast food cashier/crew member, mail clerk, and stock person (3 each).

Insert Table 1 about here

Instrument Reliability

Test-retest reliability was obtained by calling 12 of the participants who already had been interviewed. They were queried on a random selection of 10% of the items in the instrument. Of the 68 items asked, 65 (98%) were answered with the same responses as on the first administration of the instrument.

Data Analysis

Dependent variable. A longitudinal study over a period of at least five years would be the best way to obtain a measure of the proposed factors' validity. The five-year engagement was not feasible in this study. We relied instead on the combined sixteen years of experience two investigators have with youths and their prior familiarity with the participants. Based on a clinical understanding of the 38 job situations for that a complete set of data were collected, the first author assigned each former student to either a group likely to experience job success (Level 1), a group at high risk of chronic unemployment (Level 4), and a third group for that a clear-cut decision could not readily be made (Level 2 or 3). A professional who works closely with 26 of the former students, but did not collect data for the study, independently assigned them to these three groups. A reliability measure was obtained by dividing the number of agreements (21) by the total number of assignments made (26). The result was an interobserver agreement coefficient of 81%. In each instance of disagreement, the professional awarded a higher ranking than the author. The job histories of the middle group were analyzed for job retention, and divided into two groups, one having reports of better job retention than the other. Those who were continuously employed full time (or part time while attending postsecondary school) for over six months, and never experienced over three job changes within a year were assigned to Level 2. Those who were never continuously employed full time (or part time while attending postsecondary school) for over six months, or experienced over three job changes in a year were assigned to Level 3. Former students who worked in sheltered or semisheltered environments had a ".5" added to their rating for purposes of identification. Thus, the dependent variable was derived from former students who were classified into four basic levels of job success.

Independent variables. Table 2 presents the questionnaire items that measured each of the independent variables. The next step in the data analysis of the survey was to sort the responses to items according to that of the independent variables they tap (Babbie, 1973). Our hypothesis that four factors are predictive of job success was investigated by using the constant comparative method (Glaser & Strauss, 1967) of qualitatively analyzing the data collected in the survey. By this method, an array of responses to one factor in a job situation are read and compared to another. The two are then assigned to either the same or to a different subcategory. Subsequent categories may be generated when a separate response does not fit into previous ones.

Insert Table 2 about here

The first author conducted the process of copying responses from the questionnaire onto pages organized by factor. Levels began to emerge in each category, and these were noted. When the task was completed, the data were read and reread, and sorted. The categories and levels of the independent variables are described in Tables 3 through 6.

Insert Tables 3 through 6 about here

Two research assistants were trained by the first author to recognize the categories and make assignments. An interobserver agreement of 84% was obtained after a sample review of eight (21%) of the job situations (total number of agreements, 27, divided by total number of assignments, 32).

An index of income per household member was calculated by adding the former student's income to the family's (when the former student lived at that home, and was still employed at the conclusion of the study), and dividing the total by the number of people living in the household. The index was obtainable for a total of 34 situations. In four situations, the families declined to answer questions regarding income. The lowest monthly income per household member was $192 and the highest was $3,100, with a median index of $844, a mean index of $916, and a standard deviation of $525. This subsample was clustered into eight levels of under $450 per month (4 at Level 8), between $450 and $600 per month (5 at Level 7), between $600 and $750 per month (7 at Level 6), between $750 and $1,000 per month (6 at Level 5), between $1,000 and $1,2000 per month (4 at Level 4), between $1,200 and $1,600 per month (8 at Level 3), between $1,600 and $2,500 per month (0 at Level 2), and over $2,500 per month (1 at Level 1). This income index level was also tested for correlations to vocational success. Our purpose was to find out if the hypothesized independent variables were more powerful indicators than family income level.

Results

Table 7 displays the rankings of the independent variables, the dependent variable, and the income index. The median score of two on the dependent variable indicates that, as a group, the individuals were experiencing a moderate degree of employment success. On the independent variables, there were relatively high median scores for social acceptance, work rationalization, and special services. Job match and accommodation, on the average, displayed a moderate level.

Insert Table 7 about here

A Kendall's tau b correlation coefficient was calculated between the independent and dependent variables. An aggregate measure was obtained by summing the independent variable scores. A sum of 6 or less was assigned a "1"; a sum of 7 was assigned a "2", a sum of 8 was assigned a "3" and so forth. A sum of 12 or greater was assigned a "7". Table 8 shows that the aggregate measure of the independent variable correlated significantly with the dependent variable. Among the four independent variables, job match and accommodation had the strongest relationship with job success. Work rationalization, special services, and social acceptance had nonsignificant relationships with the dependent variable. Interestingly, job match correlated highly with work rationalization and social acceptance, but not with special services. These latter three variables did not correlate significantly among each other. In general, the four variables were moderately intercorrelated.

Insert Table 8 about here

A Kendall's tau could not be performed on the income index because of missing data. A two-sample binomial test of equal proportions (Marascuilo & Serlin, 1988) was calculated between the dependent variable and the income index reduced to a rating of "high" (Levels 1 through 4, > $1,000/month) or "low" (Levels 5 through 8, < $1,000/month). There was not a significant relationship. Also, there was a nonsignificant Spearman Rho coefficient between hourly wages and aggregate score.

Discussion

A model was advanced in order to account for job success in young adults with mild disabilities. Three of the four proposed factors received support. Job match was significantly related while work rationalization and special services were marginally related to employment success. If a multiple regression analysis could have been conducted with these data, it could have indicated whether the other factors would have accounted for more variance than job match did alone. In fact, the aggregate correlation with job success was no higher than that with job match alone, thus arguing against this possibility.

Former students rated as "3s" actually attained a better mean level on job match (3.67), the most significant factor, than those rated more successful by the investigators as "2s" (mean level on job match 4.89). This suggests that frequent job changes in the years immediately following high school—that was weighed against the former students by the rating formula—may actually indicate a more healthy pattern of career exploration, ultimately leading to better vocational adjustment.

The employment of persons with mild disabilities is one of the most pressing social problems in our society. The high rates of unemployment and underemployment for this group presage social costs that are unacceptable. Although there has been a considerable data base on the follow-up outcomes of adults with mild disabilities, there has been relatively little analysis of the types of factors and interventions that induce successful employment. For instance, Siegel et al. (1989) presented data showing that a longitudinal support net of employment services is key to insuring high rates of employment. They further argued for a supported employment service for adults with learning disabilities, that guarantees ongoing, open-ended employment services. At present, supported employment is becoming statutory for individuals with severe disabilities

(Rusch & Mithaug, 1980; Wehman, 1981), but is essentially nonexistent for adults with mild disabilities. The present research points to certain factors that should be critical in designing such supportive vocational services. Most importantly, a job match between individual characteristics and job demands is needed. When such a match is discordant, it is critical that an accommodation be made at the workplace. Siegel (1988) has identified some of these accommodations (e.g., more effective delivery of instructions) that were carried out or needed in work settings employing adults with mild disabilities.

The present data point to a possible relationship between vocational services and job success. Previous work (Hasazi et al., 1985) has shown that many youths with mild disabilities often successfully obtain work without special services. These might be the most capable individuals. Therefore, it is possible that job success for these capable individuals might show no need for special services, and explain the low correlation. The problems encountered in developing a sample may indicate a subgroup of youths with mild disabilities who have a significantly different profile of the four factors than those presented here. But if part of that profile includes an unwillingness to participate in such research, other methodologies must be considered.

Our four-factor model could be tested in future research by a logistic regression design that investigates whether success in any of the four categories or a criterion level in some combination of the categories would be sufficient for the prediction and attainment of employment success. The importance of job match and the differential need for special services could argue for the importance of vocational assessments that can better place individuals in appropriate jobs, suggest accommodations, and tailor the type and intensity of service systems needed to maintain employment. In summary, an ecological model identifying factors that predict employment success, particularly when they can articulate the specific types of needed support systems, is a fruitful area for research.

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Table 1.

Job Titles and Frequency of Job Titles for All 42 Job Situations

Job Title	Frequency	Subtotal
Food Service		
Busperson	5	
Cashier/Fast Food Crew Member	3	
Food Service Assistant Manager	1	
Pantry/Line Server	1	
Pantry Prep Person	1	
Prep Cook	1	12
Clerical/Office		
Mail Clerk	3	
File Clerk	2	
Assistant Secretary	1	
Auto Insurance Policy Specialist I	1	
Clerk Typist	1	
Insurance Claims Processor	1	
Receptionist	1	
Records Clerk I	1	11
Warehousing/Stocking		
Stock Person/Push	3	
Dispatching Clerk	1	
Furniture Warehouse Person	1	
Warehouse Manager	1	6
Manufacturing		
Bindery Worker	1	
Hand Packager	1	2
Retail		
Grocery Store Courtesy Clerk	1	
Retail Clerk	1	2
Construction/Maintenance		
Apprentice Carpenter	1	
Construction Laborer	1	
Janitor/Apartment Maintenance Person	1	
Landscape Maintenance Worker	1	
Locker Room Attendant	1	5
Miscellaneous		
Security Officer	2	
Landscape/Nursery Worker	1	
Rental Car Hiker/Service Agent	1	4
		Total: 42

Table 2.

Distribution of Questionnaire Items as Measures of the Hypothesized Factors.

Questionnaire: Factor	Referral	Employer/ Co-worker	Former Student	Family
1. Job Match & Accommodation		26	27	12
2. Social Acceptance		7	9	
3. Work Rationalization & Family Support		8	17	12
4. Special Programs and Services	1	2	17	3

Table 3

Levels of Job Match and Job Accommodation Based on a Constant Comparative Analysis of the Survey Data

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Core Question: Is the former student well-matched to the job? If the job match is less than ideal, were there efforts by either the employer or the former student to accommodate problems in the job situation? Are there benefits to the job situation which compensated for less than high job satisfaction?

Level 1. The job is a near perfect or perfect match, with no need for accommodation. The employer, former student, and family all concur on the job match and the former student reports high job satisfaction.

Level 2. The job is good match. The former student and family are very satisfied.

Level 3. It is an adequate job match. Or, it is a less than ideal job situation, but the former student has been successfully accommodated, with many of the on-the-job difficulties solved. Or, it is a sheltered environment where the former student has intensive training and support. The former student and/or family are at least reasonably satisfied.

Level 4. It is a tenuous match or moderate attempts at accommodation have shown some improvement in job performance, though other problems persist; the student and family are reasonably satisfied, or do not articulate strong dissatisfaction.

Level 5. It is a tenuous match or insufficient attempt at accommodation. The employer, student and/or family are dissatisfied with the job situation, but see some potential for the future (either in this or in another job situation).

Level 6. The employer is unhappy with the former student's performance. It is a tenuous job match, the student and family are unhappy, and think that the job is a poor match. Or, attempts at accommodation have made no difference.

Level 7. The job appears to be a poor match, with poor chances of accommodation. The former student has been or is about to be terminated, or quit. The employer, former student and family are all unhappy with the job situation and its potential for accommodation.

Table 4

Levels of Social Acceptance and Support
Based on a Constant Comparative Analysis of the Survey Data

Core Question: **Does the former student experience social acceptance from co-workers and supervisors on the job?**

Level 1. The former student is socially accepted without reservation, and special note of enthusiastic acceptance was made. Or, the former student is treated (and responds) just like anyone else at the workplace (appropriate number of interactions, would be invited to social get-togethers, social ecology actually responded and solved a problem, person knows how to fit in, is accepted, etc.). The social support is clearly corroborated by the former student. She/he says that they feel accepted and encouraged at the job.

Level 2. The former student is clearly socially accepted at the workplace, and has a reasonable number of interactions, but no special efforts or appreciation are noted (okay if 'wouldn't invite to a social get-together'), or special efforts are offset by other negative events or influences. The social support is at least somewhat acknowledged (or clearly not denied) by the former student.

Level 3. The former student is socially accepted at the workplace, but there are reservations in some areas, i.e., dress, understanding how to fit in, talks too much or too little, some noting of occassional inappropriate behavior; or, social support is not corroborated by the former student.

Level 4. There are clearly stated reservations about whether the former student can fit in socially. The former student states dissatisfaction, or perceptions that are significantly different than that of the co-worker/ employer.

Table 5.

Levels of Work Rationalization and Support for Work Ethic Based on a Constant Comparative Analysis of the Survey Data.

Core Question: Does a rationalization for work, and support and recognition of work and a work ethic play a role in this former student's life and work experience?

1. The participant expresses
   a. little sense of work having value beyond a paycheck.
   b. some indication of work also providing friendships, needing to be something one enjoy's, satisfying needs to achieve, have self esteem, contribute to society, fulfill a purpose.
   c. a sense of work providing the things described in "b", but articulated as part of a more developed philosophy – more than a short response.
   (for former student only). adoption of what has been taught by parents or significant others; or another significant person played a strong supporting or benefactor role.
   d. a philosophy of a work ethic expressed in sophisiticated terms.

2. The employer perceives the former student as having a similar sense of work, and having no significant differences from the employer other than age and experience.

	not positive		||	positive		
Rate the employer:		a	||	b	c	d
Answer to question 2:	no			yes		

If the employer is rated at 'c', or 'd', and the answer to question 2 is yes, assign Level 2 at least. If the former student is perceived as having a greater sense of work than the employer or family participant, assign Level 2 at least.

Level 1. There are unqualified positive indicators and perceptions in all three interviews, and the former student expressed a convincing work rationalization ("c" or "d" above).

Level 2. There are positive indicators in all three interviews, or compatible views between the employer and the former student.

Level 3. There are positive indicators in two of the three interviews.

Level 4. The job situation does not reach any of the above levels.

Table 6.

Levels of Special Services
Based on a Constant Comparative Analysis of the Survey Data

Core Question: **Did the former student receive special services appropriate to an identified need, the former student's desires, and with a vocational orientation?**

Level 1. The special services fit into level 2 below, and also address the career aspirations of the former student.

Level 2. The situation fits into level 3 or 4 below, and the special services were perceived as helpful or appropriate.

Level 3. The family, former student, or employer identified special services which were either community-based vocational training or placement with support.

Level 4. The family identified a need for special services, i.e., the former student has had problems being employed, and the employer and/or the former student received special services and/or incentives, including job placement services or other special services for academic success or social adjustment.

Level 5. The employer and/or the former student received special services and/or incentives beyond placement in special education (vocational classes, summer jobs program, etc.) which might increase job retention.

Level 6. In the job situation, the employer and the former student did not receive any special services and/or incentives which would increase job retention.

Table 7

Relative Rankings of Data from 38 Complete Interview Sets Across Independent and Dependent Variables and Income Indexes of the Families

Dependent Variable	Independent Variables				Income Index
	Job Match and Accommodation	Social Acceptance	Work Rationalization	Special Services	
1	1	1	1	5	5
1	2	1	2	2	NA
1	2	1	2	3	7
1	2	2	1	1	4
1	2	2	1	1	5
1	2	2	2	2	6
1	3	1	1	2	7
1	3	1	1	3	6
1	3	1	2	3	6
1	3	1	3	2	3
1	3	2	2	5	3
1	3	2	3	2	5
1	5	2	3	2	7
1	5	3	3	2	5
1	7	3	4	2	3
1.5	2	2	1	2	5
1.5	3	2	2	3	8
1.5	3	2	3	1	1
2	3	2	3	2	3
2	4	1	3	5	3
2	4	2	3	3	4
2	5	1	2	2	3
2	5	3	2	5	6
2	6	2	3	3	3
2	6	2	3	6	7
2	6	3	2	2	NA
2.5	5	2	2	3	3
3	2	1	2	2	7
3	2	1	3	5	6
3	3	1	2	2	6
3	4	1	4	2	5
3	4	2	3	2	NA
3	5	3	4	5	4
4	4	1	2	4	8
4	5	2	2	6	6
4	5	3	3	2	4
4	5	4	2	3	NA
4	5	4	2	3	8
Median: 2	3.5	2	2	2	5

Table 8

Two-tailed Kendall's tau b of the Aggregate Measure, the Four Hypothesized Independent Variables, and the Dependent Variable in the 38 Job Situations

	Dependent Variable	Aggregate Measure	Job Match	Social Acceptance	Work Rat./ Family Support
Aggregate Measure	.32 p<.012				
Job Match And Accommodation	.34 p<.012	.72 p<.00			
Social Acceptance	.17 p<.215	.59 p<.00	.47 p<.001		
Work Rationalization and/or Family Support	.24 p<.083	.49 p<.00	.43 p<.002	.20 p<.158	
Special Services	.25 p<.064	.38 p<.003	.20 p<.139	-.02 p<.875	.08 p<.589

Footnote

[1] San Francisco Unified School District's eligibility criteria for placement in learning disabilities programs include the following: (a) a sever discrepancy exists between intellectual strengths (includes both acquired learning and learning potential and shall be determined by a systematic assessment of intellectual functioning) and level of achievement (including the pupil's level of competence in materials and subject matter explicitly taught in school) measured by standardized achievement tests in the following areas: oral expression, written expression, basic reading skills, reading comprehension, mathematical calculation and mathematical reasoning. The criteria for placement in severely emotionally disturbed programs are when a student is diagnosed as Seriously Emotionally Disturbed by a Psychiatrist, clinical psychologist, or licensed social worker, in addition to a credentialed School Psychologies, and the serious Emotional Disturbance results in one or more of the following characteristics over a long period of time and to a marked degree which adversely affect the student educational performance: (a) an inability to learn which cannot be explained by intellectual factors, sensory acuity difficulties or chronic/acute health impairments; (b) a severe pervasive disturbance in relationships with peers and teachers; (c) extremely inappropriate behavior or affect under normal circumstances exhibited in several situations; (d) a pervasive and prolonged state of extreme depression; or (e) a tendency to develop physical symptoms or fears associated with personal or school problems.

Vocational Education for Persons with Emotional Disorders*

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Vocational Education for Persons with Emotional Disorders

The emotionally disturbed student is currently emerging as a priority in the special education and rehabilitation field. As services for persons with severe and profound handicaps emerge, in many ways education for the emotionally disturbed student remains "the last frontier" for a relatively unserved population. The Education for all Handicapped Students Act (P.L. 99-142) calls for the placement of disabled students in the least restrictive environment. The emotionally disturbed group appears to be the one population which is not being increasingly served in integrated settings. In fact, in many cases there has been an increase in the resegregation of students with emotional disorders to segregated school and residential facilities (Knoblock, 1987).

In terms of the least restrictive environment, vocational placement may be the most challenging domain. That is, because of a person's behavioral disturbances, he might be a most unlikely candidate for job hiring or retention. Yet, there is an emerging field which addresses the vocational training and placement of persons with emotional disorders. This field emphasizes proper assessments of the individual. Here we focus on an ecological approach which consider the individual in the context of their political and social environment. In addition, assessment is viewed as a continuous process which is keyed to curriculum and training programs. The content of this curriculum has a decided emphasis toward social skills. Past research shows that disabled persons primarily lose their jobs to antisocial outbursts and/or absence of positive of social skills. Thus, new work is examining how key social skills may be learned and transfer to real work settings. With effective assessment and job training interventions in place, the emotionally disturbed individual should have a more sanguine outlook in the world of work.

Vocational Assessment

The purpose of this section of the chapter is to describe vocational assessment and its application with seriously emotionally disturbed (SED) students in vocational education programs. These procedures supply, or should supply, the educator with important information on the optimal structure and design of these interventions. Unfortunately, as will be mentioned throughout this manuscript, there have been few empirical investigations on the vocational preparation of this group and fewer still specific to vocational assessment. It then is necessary to place vocational assessment practices for this group within the context of general rehabilitation and secondary/vocational procedures, and to refer to this literature base extensively. First, "traditional" vocational assessment procedures are introduced and critiqued. Second, procedures specific to the assessment of SED students are discussed.

Traditional Vocational Assessment

Vocational assessment, or vocational evaluation as some authors prefer (Pruitt, 1976), has been defined as:

> A comprehensive process that systematically uses work, real or simulated, as the focal point for assessment and vocational exploration, the purpose of which is to assist individuals in vocational development. Vocational evaluation incorporates medical, psychological, social, vocational, educational, cultural, and economic data in the attainment of the goals of the evaluation process (Vocational Evaluation and Work Adjustment Association, 1975, p.86)

The primary goal of traditional vocational evaluation procedures is to match an individual with a specific job or to recommend that the person enter training for a particular career. This type of evaluation is typically implemented within a rehabilitation facility or vocational evaluation center during a specific period of time (eg., 4 to 6 weeks).

The type of assessment tool that is paired most often with this procedure is the work sample evaluation system (eg., Singer Vocational Evaluation System, McCarron-Dial Work Evaluation System, the Tower system). Essentially, these instruments represent facsimiles or interpretations of work environments and demands, as a medium through which to measure the work skills of individuals (VEWAA-CARF Vocational Evaluation and Work Adjustment Standards, 1978). For example, a cubicle with a particular type of job (welding) may comprise part of a work sample system. The worker is asked to work at the sample while his or her performance is monitored by the evaluator or another professional and compared to some standard or norm. In some instances these exercises may be completed in a few hours, while in other cases the exercise may run for more than a day. Most of the well known systems are comprised of several such samples representing the demands of various jobs, or of specific skills generic across different jobs (eg., eye-hand coordination).

An adaptation of the work sample approach is the locally developed work sample (Sitlington & Wimmer, 1978). These assessment devices are similar in design and purpose to those that are available commercially (i.e., they embody the characteristics of specific jobs or skill elements), but they are developed to reflect the kinds of jobs available in a certain locale. Further, they should possess locally developed norms against which to compare student performance. For example, it may be that a type of production job is common in a particular area. To assess student's aptitudes to perform this job, a work sample comprised of the rudimentary skills necessary to do the job is developed. Students can then be assessed in a trial setting (eg., the school setting) to ascertain if they would be interested in that type of work, if they have the basic aptitude for training, and if they could possibly succeed in such a placement. A student who performs at the 90th percentile of locally developed norms on the work sample and who expresses an interest and liking for that kind of activity may be well suited to that kind of work.

Additionally, the assessment process can and should utilize multiple assessment instruments and procedures including psychometric tests (eg., IQ, personality), aptitude and achievement tests (eg.,California Achievement Test,

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Minnesota Clerical Test), vocational interest inventories (eg., Strong-Campbell, Kuder Occupational Interest Inventory, Geist Picture Interest Inventory), and situational assessments (eg., placing the client into work settings to monitor their behavior) to gain a global picture of the individual's work interests, skills, and capabilities.

In sum, traditional vocational assessment or evaluation is designed to structure decisions relevant to job training and placement decisions. It is flexible and expansive process that utilizes various assessment modes and instruments to gather these data. Unfortunately, this "traditional" approach is ill suited to the instructional needs of school-based vocational programs and the developmental nature of students' learning in these programs for three reasons.

First, the primary goal of vocational instruction is promote the growth and development of the student over time; a focus that runs contrary to the concepts of traditional vocational evaluation. As students are likely to, and undoubtedly will, develop work skills and expand their vocational horizons as the result of exposure to various work experiences, they do not constitute a fully formed "product" whose characteristics and potential can be measured through one assessment procedure conducted at a particular point in time. It follows, that traditional vocational assessment, that provides a static, "one shot" view of the student, will not reflect accurately their vocational growth and development, nor have utility for measuring the direction and structure of the vocational education intervention over time (Cobb, 1983; Cobb & Lakin, 1985). Sitlington, Brolin, Clark, and Vacanti (1985), in the position statement of the Council for Exceptional Children's Division on Career Development on career/vocational assessment, state:

> The goals of this process should be specifically geared to providing the information needed to make decisions in all areas of career programming; these decisions may be related to developing an individualized program (curriculum content) for the handicapped

learner or determining what assistance the learner needs to succeed in an ongoing program (p.4).

Second, and in a similar vein, caution should be exercised over the relevance and utility of the results from commercially available work samples and psychometric tests to the vocational education of SED students. Current writings question the validity of academic and achievement measures in assessing the true academic capabilities of disabled students (Wiederholt & Stubbs, 1985; Ysseldyke, Thurlow, Graden, Wesson, Algozzine, Deno, 1983), much less their applicability in measuring the vocational capacities or skills of these individuals (Frey, 1984; Halpern & Furher, 1984; Halpern, Lehman, Irvin, & Hiery, 1982). To illustrate, Cohen and Anthony (1984) conducted an extensive review of the psychiatric literature (p.86-89)on the relationship of psychometric data (eg., intelligence and personality test results) to rehabilitation outcomes. They concluded that:

1. Measures of psychiatric symptoms do not predict vocational rehabilitation outcome;
2. The psychiatric diagnosis does not predict vocational rehabilitation outcome;
3. Measures of psychiatric symptoms do not correlate with the psychiatrically disabled person's skills;
4. Measures of skills do predict vocational rehabilitation outcomes.

In short, they question the relevance of measures of the individual's pathology to his or her actual vocational abilities and capacities. As ambiguities resulting from these assessments could misdirect or shape an inappropriate vocational intervention, it is necessary to view data from these tests with caution and to not consider these results as the "end all" of the assessment process.

Finally, there is scant empirical evidence on the standardization, reliability, and validity of most work sample systems for secondary SED students (DeStefano, 1987; McCray, 1982). Thus, most of these tools lack desired item statistics, reliability, and validity for this population (DeStefano, 1987; Yoshida & Friedman, 1986). Moreover, there is reason to question the content and criterion validity of many of these tools. Do commercially available work samples and work evaluation systems accurately measure the kinds of skills and demands of the work setting? Reviews of these systems do not provide an affirmative answer (eg., Cobb & Lakin, 1985). These same criticisms also can be voiced over the majority of locally developed work samples (McCray, 1982). Of course, it is possible (and highly recommended) to construct norms for locally developed samples (and commercially available systems) over time (McCray, 1982; Sitlington & Wimmer, 1978), and local work samples should have a high level of content validity as they are grounded in the work available in a particular area. Still the predictive validity of the results of most commercial and local work samples to "real" outcomes, i.e., the relationship of the data on an individual's work capabilities derived from a contrived assessment setting to his or her performance in the actual work environment the student enters, are not established. Again, caution should be exercised to avoid over-reliance on these kinds of tools to plan vocational education programs for SED students.

Given the above information, it may be concluded that school-based vocational assessment for SED students should not be structured along the lines of traditional vocational assessment procedures. In fact, Hursh and Kerns (1988) have stated that traditional vocational evaluation methods are not useful in identifying work skills and abilities of SED persons. However, it is possible to utilize elements of these procedures to build such a program and conduct these types of assessments. The question then becomes, how should such programs be designed? The next section addresses this issue.

Vocational Assessment for SED Students

In this section three areas are examined. First, factors relevant to the vocational assessment of SED students are delineated. Second, general vocational guidelines are discussed. Finally, a case study of the vocational assessment of a hypothetical SED student is offered.

Assessment Factors. Numerous authors (Cobb & Lakin 1985; Stodden, 1986; Stodden, Iannacone, Boone, & Bisconer, 1987).) suggest that the most appropriate vocational assessment procedures for students in school settings are informal methods that mirror curriculum demands at key decision points. At different times in the educational sequence the practitioner must be concerned with screening, initial program planning and placement, monitoring individual progress in job tryouts, and ongoing monitoring of job placements or advanced training (eg., postsecondary instruction). Accordingly, curriculum-based vocational assessment procedures (CBVA) are recommended as components of vocational education programs for SED students. CBVA has been defined as an

> informal, less intensive process of vocational assessment in which the development of student prevocational skills, career awareness and vocational skills are monitored from elementary school through adulthood. Curriculum-based vocational assessment uses existing data and records, informal techniques of vocational assessment such as teacher and counselor observations, parent and student interviews and basic vocational testing that may include vocational interest, aptitude and awareness testing (Peterson, 1985, p.11).

Of course, such an approach demands that the content to be taught in the vocational program can be identified. Examination of critical work-related variables for disabled persons have either been general in nature (Foss, Walker, Todis, Lyman, & Smith, 1986) or have focused on individuals with mental retardation (Chadsey-Rusch, 1986; Salzberg, Lignugaris/Kraft, & McCuller, in press). This section borrows from these references and refers to the available literature on SED persons where possible to present a framework of work skills and job-related behavior around which to structure vocational assessment programs. Figure 1 provides a listing of the factors that comprise this model.

PLACE FIGURE 1 HERE

It is crucial to analyze potential and actual work environments to foster a suitable match between the student skills, abilities, and job demands and to identify the requirements and benefits of the job site (Calkins, Walker, Bacon-

Prue, Gibson, Martinson, & Offener,1985; Lofquist & Dawis, 1969). The inclusion of an intensive environmental assessment component for SED adolescents is especially important as external support is often necessary for the job placement to be successful (Cohen & Anthony, 1984).

Also, in order to match the individual with a job that she or he will enjoy and hopefully be successful at, it is necessary to analyze their vocational interests and requirements for what will be gained from the job (Loftquist & Dawis, 1969). As noted earlier, though, adolescents, particularly adolescents who have minimal work experiences, are likely to change their work goals and desires many times as part of their development and exposure to different occupations. Thus, it is necessary to conduct this kind of evaluation periodically to chart the individual's growth and changes over time.

Finally, particular attention must be given to the actual work competencies of the student. In order to be successful in the employment setting the worker must be proficient in three broad domains: task performance, work adjustment, and social/interpersonal behavior on the job. It almost goes without saying that for a person to maintain and progress in the employment arena it is mandatory to be able to perform the required job tasks in a satisfactory manner. For the disabled worker such competence may be even more important than for the nondisabled worker, as these people may need to excel at work to compensate for the stigmatizing effect of their physical or mental condition(s) (Gold, 1973). Consequently, it is imperative that the performance factors that affect work competence be examined. These areas may be considered in terms of the individual's physical and cognitive abilities, general work skills, and specific job skills.

Essentially, the person's physical and cognitive abilities are the foundation of his/her work potential. These basic capabilities will, in one way or another, dictate the kind of work in which one may be involved. For example, an individual with a weak back would be unsuited for a job requiring heavy lifting and a person with a severe reading disorder would have difficulty functioning as an editor. General work skills refer to competencies that may be required in numerous jobs and constitute task clusters (eg. the ability to type, to use tools, etc.). Finally, to be successful on a specific job a worker must be able to exhibit the necessary prerequisite job skills.

Second, the work adjustment domain is composed of the formal and informal work rules that dictate how an employment setting operates. These skills are peripherally associated with the production requirements of the job and conform to fundamental notions of how an employee should present him or herself in the work setting. Aspects of work adjustment include appropriate dress and grooming for the specific job, exhibiting enthusiasm and motivation to work, following safety regulations on the job, being punctual in coming to work and regular attendance, demonstrating sufficient attention to the job task, and being able to terminate a job in an appropriate fashion.

Last, several studies suggest that the primary correlate of SED workers' success or lack of success in job placements relates to their level of social/interpersonal competence in the employment setting, i.e.,the ability to "get along" with others on the job (Anthony, 1979, Dellario, Goldfield, Farkas, & Cohen, 1984; Griffiths, 1973, 1974; Hursh, 1983; Watts, 1978). Recent reviews of the literature on social competence in employment by Chadsey-Rusch (1986), Foss et al. (1986), and Salzberg, et al., (in press) specify three categories of job-related social/interpersonal behavior: Disruptive behavior, Supervisor relations, and Co-worker relations. It should be noted that little research has been conducted to date to delineate specific clusters of behavior issues or problems experienced by SED workers in these categories. Thus, this listing is general and serves only as a starting point in considering this broad, yet important, area.

Disruptive behavior refers to bizarre, emotional behavior that may be either aggressive or extremely withdrawn. It also includes sexually deviant and inappropriate behavior and detached or unconnected conversations and/or verbalizations. These kinds of responses may have a long-standing history or be associated with transient stress or specific environmental stimuli.

Supervisor relations refers to the way in which the worker interacts with the work supervisor. Content areas within this category include the ability to respond appropriately to criticism or correction, being able to request information or assistance to complete a work task, and being able to follow work-related instructions.

Co-worker relations refers to the way in which the worker interacts with other workers in the employment setting. Specific to the production arena three content areas are identified: exhibiting cooperative work behavior, being able to handle teasing or provoking from other workers, and being able to resolve personal concerns. Foss and his colleagues also emphasize the importance of relationship building skills,i.e. the ability to develop friendships and supportive relationships with coworkers. In summary, these factors provide the content on which the vocational assessment of SED students should focus. The next section provides guidelines that should be followed in the effort.

Assessment Guidelines. Several general rules should be followed to conduct comprehensive and meaningful vocational assessments of SED adolescents. First, vocational assessment of SED students is a very involved process that will vary for each individual and involve different assessment tools and procedures. Consequently, it is impossible to recommend that particular instruments be used in all cases. For descriptions of specific measures that may be administered, the reader is referred to DeStefano, Linn, and Markvaard, (1987), Halpern et al. (1982), Hursh and Kerns (1988), and McCray (1982).

Second, to reiterate an earlier point, psychometric assessment tools (IQ tests, personality tests) have only peripheral utility in the vocational assessment exercise and should not be used to make major decisions about the work skills of SED students. They may be used as base measures and may give some relevant data to augment the overall process. For example, IQ information and personality measures should be employed to gain a rough idea of a student's raw skills, but as stated previously these results have weak relationships with success in job placements.

Third, most commercially available work sample systems do not possess sufficiently strong psychometric properties for use with this clientele. Further, the content of these samples, or the entire systems, may be only tangentially related to the kinds of jobs available in a particular area. As work sites available in a region become clear, it may be possible to identify components of these systems that match these jobs and to develop locally based norms for these tools. For example, it is discovered that a particular commercially available work sample system contains a component that is a reasonable likeness of a production job in a town. This part of the system is purchased. To establish initial criterion levels of performance on this task, workers from this specific job are administered the sample and their performance is monitored to establish a standard against which the performance of the students can be judged. As students are tested on the sample it will also be possible to establish student norms to gauge the potential of individuals to perform this kind of job. Similarly, it is also possible to develop local work samples that mirror the kinds of jobs found in a specific community and to follow a parallel procedure in establishing norms for those instruments. However, there are simply too many variables associated with the job setting that cannot be reproduced in an analogue situation and there is no one work sample or work sample system on which the vocational assessment of these students can be based.

Third, multiple informants as well as multiple measures should be used (Kazdin, 1979). Work supervisors, physicians, coworkers, family members, and other teachers may all supply important information to the student's vocational assessment. Too, the student should be a central source of data in the overall process. Not only should the student be observed to analyze his/her work-related behavior, but the student's knowledge of those areas should be assessed

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directly and care should be taken to weigh the individual's work interests in the education and placement efforts.

Fourth, it is critical to conduct a comprehensive assessment of the local community and each potential work environment to identify available jobs and the specific requirements and resources of those settings. After this molar evaluation of work opportunities and resources is conducted, it will be possible to establish job banks that can be used as placement sites and that can be analyzed to identify generic skills and curriculum materials. On a molecular level, in order to maximize an appropriate person-environment match, it is necessary to specify the production demands of the job, the flexibility of the job in terms of being modified, the stress or pressure of the position, the supportiveness of the supervisor and coworkers, and the level of social interaction required between job staff and customers. Because there are few structured ways to assess the work environment, it is most practical to develop a generic, locally-based form. For example, after identifying a number of factory jobs in a community it will be possible to conduct an in-depth analysis of the requirements of each job setting. It may well be that the production demands of one position were much higher than those of the others; in which case, it would be unwise to place a nervous student at that site. On the other hand the analysis of the sites revealed that in each, all workers were required to use metric measures and interact often with an immediate supervisor on any mistakes and problems they encounter. Such data would be invaluable for structuring the way in which students placed at these sites are trained.

Finally, the bulk of the vocational assessment enterprise with SED students should be composed of situational assessments (Hursh & Kerns, 1988). Essentially, in this technique the client is placed in an actual job and then his/her work skills and behavior are observed and measured (Hursh & Kerns, 1988; McCray, 1982; Pruitt,, 1976). Hursh and Kerns (1988, p.156) stated:

> The purpose of situational assessment is to systematically observe the individual's performance in relation to the characteristics of the work

> environment, and to systematically adjust work characteristics (tasks assigned, relations to others, amount and type of supervision, production demands) in order to identify the social and environmental factors that may promote or hinder work performance... Situational assessment is not only a process of observing behavior, but is also a dynamic process of systematically altering work characteristics to observe work adjustment and performance.

Data from situational assessments may be gathered from rating scales of work behaviors completed on a frequent basis by work supervisors, rating scales of student's behaviors completed by co-workers or teachers, and precise behavioral observations the student performing on the job. For example, data from a student's IQ and personality tests may suggest that he is of average intelligence but is depressed and unhappy in school activities. Initial vocational assessment on both commercial work samples and locally developed work samples indicate that he has the aptitude to excel in a particular type of factory job that is found at three sites in the area. Two of the sites, though, have very high production demands and are notorious for breaking the spirit of new workers, but they pay quite well. As an initial placement, then, it is decided to start the student at the third site for four hours a day, four days a week to see how he will do in a less demanding competitive employment setting. During the first two weeks of the placement, the work experience supervisor spends at least 1 to 2 hours with the student monitoring his work and offering tips on completing the job in an efficient manner. After this period the work experience supervisor stops to observe the student twice a week for 30 minutes at a time and to gather information from others at the work site. On a weekly basis the student's immediate supervisor completes a rating form developed through the vocational education program that reflects generic work production, work adjustment skills, and job-related social skills. On a bi-weekly basis the student's co-worker completes a similar form and, at the same time, the student completes yet another previously developed form that is comprised of similar content. After two months it is noted that the student's work rate, which had been quite good, has slowed and that his behaviors (eg., crying, lethargy, sad affect) indicate that he is becoming depressed. However, there is no apparent reason for the problem nor do any of rating forms provide a clue as to the problem. The work experience supervisor decides to observe the student at various, unannounced times over the next week to discover what is wrong. After observing the student during morning and afternoon work hours an observation is done at break. The student is observed talking to two co-workers who are taking his money. The next day when confronted with this information he admits that the two had been taking money form him for sometime and that he did not know how to handle the problem and was dreading going to work, hence his depression and slower work rate. As a first step the student is provided with assertiveness training for the situation and told to try to handle the co-workers on his own, before other actions are taken. After a week the student reports that he has not been bothered and data from the work supervisor and the co-worker with whom he works indicate that both his affect and work rates have improved. The discussion now turns to Figure 2 in which a comprehensive model of vocational assessment is presented.

PLACE FIGURE 2 HERE

Starting at the top of the figure, it may be seen that the vocational assessment should be considered as a longitudinal, developmental process and conceptualized in terms of four distinct, progressive categories. Initially, it is important to gather data for basic screening purposes in order to analyze the students physical, emotional, and intellectual capabilities and to establish a rough gauge of his or her work potential. Second, it will then be necessary to assess the student's knowledge and awareness of work as well as basic work skills, as a starting point in the instructional and vocational planning process. Both of these first two phases will utilize psychometric measures, achievement tests, paper and pencil tests of functional skills (eg., work adjustment skills), and work samples. In all cases the purpose of the assessments should be to structure basic instruction on generic job skills.

Third, the student should be placed on various job sites to foster multiple work skills, expand their work interests, and promote the generalization of these skills to different environments (eg., accepting criticism and correction from more than one supervisor). Further, these data should be utilized to shape eventual job placement and continuing education decisions that will be made by the student and the work-experience coordinator. Our bias is that these tryouts should be based in competitive, community-based settings instead of contrived placements in school or sheltered settings. Of course, these safer placements can be used to foster the development of student's work-related skills. Fourth, after the final job placement or training placement is made, it will be critical to follow the worker for some time (eg., six months) to monitor his/her progress and problems. During these third and fourth phases it is probable that data will be gathered primarily from situational assessments.

Moving to the left side of the figure, are the four content categories of vocational assessment, the specifics of which were discussed in the previous section. Assessment activities should focus on the vocational interests, work production, work adjustment, and social/interpersonal behavior of SED students in the actual employment setting. Vocational interests can be assessed through standardized instruments, but it is likely that a student's interests will change as they are exposed to new and challenging job placements. Thus, structured and ongoing interviews are probably the best way to keep tabs on the student's interests and goals. An initial handle can be gained on the student's basic work production aptitudes and capabilities and work adjustment, through work samples and job tryouts, however, it must be stressed again that situational assessment provides a much better medium through which to gauge student's actual work performance and adjustment competencies.

Finally, special emphasis should be placed on the analysis of SED students' job-related social behavior. Social behavior consists of two distinct components: knowledge of how to behave and then the actual execution of those behaviors (Bullis & Foss, 1986; Gresham, 1986; Kendall & Braswell, 1982; McFall, 1982). Knowing how to act or respond in a certain situation is most probably a necessary prerequisite to performing the correct behavior. It is, however, entirely possible that a person may know what to do in a situation but for some reason not perform in an appropriate manner. It is then necessary that the vocational assessment process encompass both knowledge based and performance based assessments. To illustrate, a student is administered a general test of work adjustment skills. Her score on the measure is near perfect, but reports from her immediate work supervisor on her punctuality, dress, and personal hygiene are far from positive. When confronted with this apparent inconsistency, she states that she doesn't like her present job and so does not want to try to make a good impression. In fact, she is really trying to get fired. Further discussion reveals that she would like a different job. After this placement is made, her work adjustment behavior on the job improves to acceptable levels.

To conclude this section, it should by now be clear that the vocational assessment of SED adolescents is a complex and important part of the transition effort. It should complement the instructional thrust and analyze variables relevant to the SED student's work preparation and placement. Care must be taken to carefully assess the student's job-related social/interpersonal behavior and to conduct inspections of potential work sites to foster appropriate job placements. Multiple measures and informants should be used, and the bulk of the assessment activities should be based on situational assessments where students are placed in actual job settings and their performance monitored. Given the central nature of vocational assessment to job preparation, it is indeed unfortunate that there are no clean and simple assessment procedures to implement and follow. To illustrate how vocational assessment may proceed for an actual student, a case study is offered next.

Case Study. Ron is a 15 year old, white student in a metropolitan setting who was diagnosed as being severely emotionally disturbed in elementary school. At that time he was considered hyperactive and presented numerous instances of aggressive and oppositional toward peers and adults. This kind of behavior has continued and there is a marked trend toward more criminal kinds of behavior, including fighting. His intellectual abilities, based on various psychometric measures, are judged in the low average range, and his grades are barely passing. He has trouble with reading and math and functions around the fourth grade level in both. Reportedly, he dislikes school but does maintain a fairly consistent pattern of attendance and can be likeable. He has been referred to vocational education by his school counselor in the hope he will learn a viable trade before exiting school.

Before Ron's formal entrance into the program his counselor, principal, school psychologist, school nurse, and work experience supervisor meet to review his file. There appear to be no physical limitations noted in Ron's file, however efforts will have to be directed to improve his functional reading and math skills prior to job placement. After this initial review, Ron and his mother join the meeting. Ron expresses an interest in learning to be a mechanic, but admits that he has very little actual work experience except for helping out around the house. His mother states that Ron is good at home and takes care of his little brother in the evening while she works. Because of this commitment it is not possible for Ron to be placed in training sites after five in the afternoon.

To begin the program Ron is administered a battery of vocational interest and paper and pencil tests of work adjustment and job-related social behavior. He also is scheduled to enter a group counseling session in which students discuses their vocational goals desires, and problems. Based on the results of these initial assessments it appears that Ron is, in fact, interested in automotive repair, as well as computers and printing. The school maintains a vocational assessment center that contains both commercially available and locally available work samples in these three areas. Ron is required to complete the work on these samples over the course of a three day period while his performance on the tasks and at break is monitored. The results of these assessments are somewhat surprising as he has great trouble completing the work samples related to automotive repair, but excels in printing. Some problem is noted at break times, as Ron is very aggressive and inappropriate toward some of the female students. In reviewing these results Ron agrees to begin a tryout placement as a printer at the school district office for three hours a day in the mornings and he is enrolled in a remedial class in which functional academics are emphasized. He also is required to participate in his group by discussing dating and heterosexual behavior.

The job placement has several problems at the beginning. Ron's supervisor in the printing shop states that he is a good worker, but that he acts in an abusive and nasty manner toward other workers. His progress in the class is directly related to the demands of the job and he is making adequate progress. However, he is having difficulty in the unstructured group setting and is not attending to the interactions nor the social skills discussions. Ron states that he likes the printing job and would like to be placed in the community in a competitive job. He is told, though, that in order for this to occur he will have to improve in his social skills and participate actively in a structure group directed by the work experience supervisor that focuses on job-related social behavior.

Ron enters the program and does quite well over a three month period while maintaining a better than average work record. He is placed a competitive job as a printer during the mornings of the school week and required to continue the remedial class and the structured social skills class. Monitoring of his work over several weeks through input from the immediate work supervisor and direct observations reveals that work tasks are being done well, but that Ron is "hitting on" a female co-worker constantly and very inappropriately and causing a disturbance in the work setting. The work supervisor observes Ron and the co-worker over the period of several days at break and discovers that she is leading him on with suggestive remarks that precipitate his behaviors. This problem serves as the basis for several lessons in the group and over the course of the next few months Ron's behavior improves and his work remains good.

At the end of the term Ron expresses an interest in learning about air conditioning repair, possibly working as an assistant to the repairmen of a large company in the area. To accommodate his desire the basic screening, work sample assessment using parallel samples to the job requirements are administered in the school setting, and a job tryout in the school environment is tried before he is placed in a competitive job. It is probable that this process will run through several such iterations before Ron leaves school.

Summary

The vocational assessment of severely emotionally disturbed secondary students is a complex aspect of the vocational education process. It should complement the international thrust and must be comprehensive to analyze fully variables relevant to work preparation and placement. Care must be taken to carefully assess the student's job-related social/interpersonal behavior and to conduct inspections of potential work sites to foster appropriate job placements.

It is unfortunate that there are no clean and simple assessment procedures to implement and follow when working with this clientele. Too often this situation prompts educators to disregard the assessment process in the vocational educational program. Such omission is critical as this kind of data should form the cornerstone of the instructional effort. It will only be through coordinated vocational assessment and education programs that the all too pervasive problems of unemployment and underemployment that face this population will be resolved.

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ENABLING VOCATIONAL PLACEMENTS TO SUCCEED

This section will discuss the contexts encountered when attempting job placements for youths with emotional disturbances. It will suggest some strategies which anticipate the problems likely to occur, and suggest components essential to a vocational curriculum for this population. Finally, programs which are serving this population and anecdotal accounts useful to the reader will be cited.

Of all the settings encountered by a youth, the workplace is often the most overt and demanding in its standards for normalcy and consistent behavior. The inherent nature of the marketplace demands worker behavior which directly serves and enhances sustained and increasing commerce. Customers must be satisfied if a business is to survive, be it through the quality and quantity of products produced or quality of services rendered. When a business functions well, there is compatibility between the goals of the organization and those of its employees. This intensity of purpose creates a narrow subculture where a new, young employee who may be the defining member of a discordant ecosystem (Hobbs, 1982) will also run a high risk of being *deviantized* (Schur, 1980) by the so-called mainstream social ecology of the workplace. Consistent with Hobbs' educationally-based approach, Schur discusses a shift in the sociology field away from the individual deviator. Recent research and thinking focus on the processes which define and subsequently react to so-called deviance.

> "Deviance situations seem to arise when (and to the extent that) people who are in a position to impose their judgments find other people's behavior in one way or another 'unsettling'. . . . Common to all these situations. . .is a process of social typing through which those who. . .feel threatened seek to avoid the persons and negate the conditions they find objectionable. To the extent it succeeds, this process depersonalizes the offending individuals—who are treated as mere instances of a discreditable category, rather than as full human beings—thus imposing personal stigma and providing a basis for collective discrimination against them. There is no one generally agreed-upon sociological concept used to describe these processes. For want of a better term, we can say that in such situations certain types of behavior and conditions, as well as particular individuals, are—in varying degrees—*deviantized* (Schur, 1980, pp. 4-5)

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It might therefore be best to discuss issues of job placement and job retention, not in terms of an emotional disturbance which resides in the worker, but rather as a job situation which carries a potential for being troubling. Counterproductive interactions, social and work-related, may outnumber productive ones.

Services provided by professionals with savvy and skills that encompass both an awareness of the new employee's/client's situation and the social and work standards set by the employers and co-workers can neutralize and reverse the deviantizing process. Ideally, a compromise is reached whereby the disturbed individual will accede to most of the requirements of the workplace, and the social ecology will flex slightly to accommodate some behaviors that might have not previously been tolerated. The highly sensitive task facing the vocational professional is to help identify the process for all the involved parties without embarrassing or offending them. The task is to induce or persuade the employer and employee to make some accommodation. In the case of employees whose perceived deficits are associated with emotional disturbance, this could involve redesigning the job in terms of how social contact is handled, reforming the social ecology of the workplace and expanding the limits of social acceptance, or teaching the new employee to self-modify troubling behavior. Negotiating such agreements will enable social acceptance, which will in turn serve to align efforts at making a job placement succeed.

A comprehensive vocational training program for youth with special needs (Gaylord-Ross, 1988) which also includes affective education can enable troubled and troubling youth to be better prepared for competitive employment as they approach the transition from school to work. Besides the necessary training in academic and job skills, an affective curriculum can give students tools and self-knowledge which can be applied towards vocational adjustment. Such an affective curriculum can be defined as tasks or activities which use roleplays, simulation games, and modeling to generate a flow of primary (logical/rational) and secondary (emotional/intuitive) process data from a group or team the results of which are totally within their control. Feelings of powerlessness often accompany an entry-level job situation Affective education offers a way for young people to begin to overcome that, not as a means of social control, but as an opportunity to gain the self-knowledge that will motivate a youth to act productively to change situations which are dissatisfying

However, the delivery of quality services which provide emotionally disturbed youths opportunities for affective growth is not enough Educational and social services fulfill their missions only when they follow through with true enablement for citizenship In most cases, competitive and gainful employment is a requirement for anyone to enjoy the benefits of citizenship Levinson (1984), among others, identifies job retention as a critical challenge One approach to meeting this goal is transition programming which follows youths beyond their high school graduation and the typical 60- or 90-day timeline for case-closing Such a program can stabilize job placements, first by reassuring a new, young worker of ongoing services, and secondly by enabling the employer to learn and take over the functions of reducing discord in the environments surrounding a (potentially) difficult job situation

Programmatic components developed to make a job situation function with minimal but adequate services can aid job retention when implemented in a coordinated fashion These include Problem Solving, Resource Building, Social Skills Training, Team Building, and Ecological Intervention (See Figure 3)

Insert Figure 3 about here

Problem Solving

Before participants in an on-the-job problem can begin to solve it, the question of problem ownership—Who owns the problem?—must be answered When there is a difficult job situation, problem ownership means that either a youth, employer, governing organization, family, service provider, or even consumer acknowledges whatever it is which they themselves contrbute to the problem, and are thus prepared to take responsibility and consider alternatives which may solve that problem In a labor market of low demand

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and high supply, the likelihood of employer participation and ownership of a problem involving a youth in a troubled and troubling situation is generally low. When conditions such as war or low birth rates create a greater demand for workers, it can be expected that private sector employers will be more willing to cooperate actively with service providers.

The high and increasing unemployment of certain minority groups, persistent conditions of social unrest, the lowering of the American literacy rate, and the continued loss of business to foreign competition have all stimulated a generalized response from government and business that would indicate a nominal degree of problem ownership. Given a credible model of service delivery, policy decisions on the government and private sector level support mutual participation. In urban areas, the inescapable presence of more and more poor and homeless people—many of whom are deinstitutionalized patients from mental institutions—have finally prompted some response. For example, in San Francisco, the Mayor's Delinquency Prevention Commission has mobilized new coalitions to deal with the homelessness, out-of-home placement, education, recreation, and employment issues facing delinquent and at-risk youth. The Teen Age Parent Project recently receive a new grant to develop employment services for young and unwed parents. The Marriott Corporation, Photo and Sound, and California State Auto Association (CSAA) all sponsor community classrooms where students with mild handicaps receive supervised on-the-job training. Walgreen's Stores in Chicago regularly hire people with backgrounds of emotional disturbance. The Adopt-A-School program, sponsored by the San Francisco School Volunteers, provides opportunities for corporate organizations such as Pacific Bell and Wells Fargo Bank and their employees to directly serve the city's public school students.

Besides policies made at the organizational level, the persons who have direct contact with troubled and troubling youth are also able to respond and take some ownership of a troubling situation. Webster (1981) outlines a vocational-technical training program for emotionally disturbed adolescents which incorporates problem ownership and problem solving skills. Efforts to increase problem ownership by families and employers will expand and nourish the movement towards a more inclusive workplace, but instances and opportunities face all of us in our daily lives as well

For example, the coordinator of a local jobs training program parked his car in front of a cardboard abode constructed by its "bag lady" inhabitant near San Francisco's Civic Center She accused him of not working When he explained his job to her, she replied "Well then why don't you help Pauley? He just comes around and bothers me. He spit on my Bible He ripped my tent and poured sauce on it Then he put chewing gum in my hair Why don't you get him a job, or get him in the Boy Scouts?" The coordinator gave his card, and asked Jayne, the bag lady, to have Pauley call him The next week, the coordinator received a call from the owner of a delicatessen in the area Jayne had given him the business card, and told him to call Though the owner could not offer Pauley a regular job, he agreed to speak to a few of the other merchants in the neighborhood, to see if they could pool resources and hire Pauley to do odd jobs for all of them on a rotating basis The coordinator offered to find a college intern who would be utilized as a service provider to help engineer a successful job experience for Pauley, who not yet twelve years old, and living in a difficult and impoverished family situation

Another young woman with learning disabilities, MaryBeth, went into a training program with the Department of Rehabilitation. Here she learned how to type at 80 words per minute. She was sent out on a job interview, and hired at a government agency. However, a few days into the job it was realized that she could not correct spelling errors or read handwriting Her training had only been in typing from a correctly spelled printed page. Despite the immediate assistance of a job trainer, MaryBeth could not do the job However, the young woman had excellent social skills, and was immediately accepted, liked, and "owned" by her co-workers and supervisors. A different job was redesigned and "broken out" from the work load of the staff, and MaryBeth was retained at the same salary in a job she could perform competently.

Unfortunately, the scenarios where such immediate and flexible accommodations are made occur infrequently. The fact that MaryBeth's social skills rescued her is significant as well. Youths who define

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emotionally troubled and troubling situations are among the special needs groups least likely to elicit compassion or problem ownership from their employers. Their handicap is usually perceived as a lapse of morals, grace or intelligence, and not as an emotional incapacity. For this reason, problem ownership by the troubled youth is absolutely critical to their empowerment in the work world.

The behavior standards of the work world are going to expand only in the smallest of increments. Service providers are limited in the amount of problem ownership which is productive. That is, efforts by teachers and other benefactors to "rescue" troubled youth from the challenges of the mainstream world usually serve to make them more helpless—handicapped. True enablement comes from a realistic appraisal of the mainstream by the youth, and ownership of the problems that inhibit her or his acceptance. For example, a young man in a job training program failed to process the paperwork which would put him on the payroll for the stipend provided by the program. When he blamed the program for not paying him, it indicated a situation where problem ownership—I have to process this paperwork if I want to get paid—was improperly identified and taught. Similarly, if a troubled youth does in fact wish to hold down a job in the work world, acceptance of all the relevant standards, from dress to behavior, must be acknowledged and owned by the youth as a first step towards success.

Clearly, vocational adjustment usually speaks to just such an integration. In the cases of youths who prize their deviations from the norm, and are not ready or willing to compromise them, alternatives ranging from college to sub- or counter-cultural pursuits must be considered as well.

Quality vocational services will clarify issues of problem ownership for the youth, and back them up with tools that enable the youth to solve those problems she or he has had the courage to own. For example, teaching youths how to make effective observations and to be active listeners provides a basis for self-expression which does not offend. It teaches problem solving and increases the likelihood of social acceptance on the job. Active listening skills are communication tools which can help a troubled youth become a social contributor. This skill, which can be rehearsed and practiced, includes being able to repeat back to someone else in your own words, make nonjudgmental observations, ask open and feelings-oriented questions, and make observations of nonverbal behaviors. When a youth develops these skills, he or she is valued for their ability to listen. If they develop this style of relating among the key people in their ecosystem–peers, co-workers, family, professionals–they will have a resource which will alleviate what may otherwise become troubling situations.

Effective observations express specific behaviors observed, i.e., describing body language, tone of voice, or eye contact. Furthermore, they are nonjudgmental, i.e., they will paraphrase what the observing party understood without adding any evaluative language. As an example, a young worker who feels misunderstood by his manager could say, "I noticed you rolled your eyes when I came in this morning and you said that I finally made it on time. . ." instead of "You're such a bitch. I really tried to get to work early this morning, and you just looked at me like you don't think I can ever cut it at this job. You've got it in for me, I can tell. . ."

When students in their first jobs learn to make "I" statements (Gordon, 1975)–owning a feeling, describing the conditions under which that feeling occurs, and trying to explain the reaction–their co-workers and managers are less likely to punish or exclude them. The "I" statement avoids blame, and gives its listener a "handle" for problem-solving. "I felt hurt when you rolled your eyes this morning because I really tried to get to work early, and I'd like to get some credit for trying."

When feelings which arise from a problem are correctly identified and expressed nonantagonistically, the first stage towards solving that problem has been completed. Students can be trained to then identify the issues which bring up those feelings, to identify the specific problem, generate alternatives, test them, and then contract to change behavior. For example, a young employee may feel hurt, criticized, rejected and inadequate on the job. She may then identify the problem of a supervisor who is extremely critical and realize the more general issue, that criticism put in such a way has always had this effect. Among her alternatives will be ignoring the supervisor, meeting and problem-solving with the supervisor, quitting the job, asking for a transfer, throwing a tantrum on the job, etc. Testing these alternatives in a session will allow the worker to predict consequences, and finally, to make a decision which will empower her realistically. By seeing the choices that are available, by taking the time to predict consequences, the troubled youth ceases to be troubled and begins to be powerful. A vocational professional who supervises work experience can facilitate the problem-solving process, educating the employer as well as the youth. The later transition of the youth to a more independent setting may serve to generalize the skill. A professional who remains available in the first years of transition will increase the likelihood of that generalization. Such skills are consistent with learning research in cognitive behavior modification and self-monitoring.

Thus *problem ownership* enables youths to put their situation in perspective, and as this skill in perceiving the world accurately increases, it empowers them to make decisions competently. To the extent that the government and employers themselves begin to own the problems of underemployment and inflexible work ecologies, troubled and troubling youths will stand a better chance of succeeding in the workplace. The *problem-solving skills* described take the understanding of problem ownership one step further, and provide tools which enable youths to self-advocate yet maintain a positive presence on the job. They can negotiate changes which will accommodate their needs, and they can come to understand what reality is being presented at the workplace.

Social Skills Training

Once a job situation is established, and the new employee can articulate a commitment to making it work, a behaviorally based social skills training program can enable them to gain access to the social reinforcers on the job. They can learn to make friends, to get and give assistance when needed, and they can learn the unwritten social rules of the workplace, and learn how to observe them and use them to their advantage. Thus *social skills training*, which is described in more detail in the next section, enables social acceptance on the job.

Resource Building

Being able to actively listen, and having individuals close at hand who will participate as listeners, provide the core of resources which will enable a youth to survive and sustain a job situation that might otherwise be at-risk. Sources of support on and off the job, either emotional or in the form of assistance and incentive, can work together to form an entire ecosystem which the youth defines, and is aligned and directed at the development of the youth's career. While in high school, the people closest to a youth are usually the family and peers, and it is those players who must take an active role if vocational training is to be effective

If the young worker is exiting high school, and participating in a group work experience, the students/interns can easily form a cohesive and supportive group They are all engaged in a similar struggle to find employment or college acceptance when they graduate, and they have similar fears and excitements about the future. In a seminar format where some of the affective skills described above are learned and rehearsed, the students can experience the value of social support The prompting and counseling which comes from on-the-job trainers and transition specialists can replicate that support by encouraging co-workers to take on a benefactor role Indeed, that young people can make the social transition from school to work is crucial. One graduate of a job-training program said that she would not leave her low-paying job in a department store for any amount of money because her friends on the job were so important to her.

Finally, the same professionals can meet with the family, spouse, or close friends of the youth, and ensure that all the key players are oriented towards the same goals, be they work, career/job development, or a college education With sufficient positive reinforcement, a skeptical family can be convinced of their child's competence, a reluctant co-worker can become an avid supporter, and peers can get in touch with and express empathetic support for the struggle. Webster (1981) comments that in the Alternative Vocational School in Conncecticut, performance beyond minimally acceptable levels is rewarded through telephone calls to parents, parole officers, and other important adults.

Marlena was a withdrawn young woman with a history that included two nervous breakdowns. Besides some of the disorientation which her medication created, she also spoke English as a second language. Marlena was employed as an intra-office mail messenger in a large law firm. She had some difficulties with the technical aspects of the job (understanding the system of using the lawyer's initials for sorting mail), and her extreme shyness was inhibiting social acceptance on the job. The added services of a transition specialist included the development of materials which better explained the mail system, and one-on-one coaching of social skills. While the specialist could see changes in Marlena's work accuracy and social behaviors, her employer was still unsatisfied and decided to let her go. However, he truly regretted the placement not working out, and put off the actual termination. In the interim, the transition specialist continued to plead Marlena's case, and the effects of the job and social skills training began to increase. At this point, her improvement was noted by the co-workers and the supervisor, and she was retained. Today, Marlena continues to work at this office, and five months into the job, is visited by the transition specialist about once every three weeks.

In the above case, Marlena's sources of support included her family, her transition specialist, and eventually her supervisor. Other examples of social support come from co-workers who take a special interest and may help design accommodations or socialize with a new worker. Peer groups which value employment or just require spending money for participation are another form of resources which support employment retention. The value of the job or work, and strategies for retention or career development can become topics of interest to social groups.

Finally, the government becomes part of resources for the youth. First, if the new employee qualifies as a client of public rehabilitation services, tax incentives like the Targeted Jobs Tax Credit are available to the employer. Job Training and Partnership programs which include stipends to pay partial wages during a training period can also support the hiring and retention of a troubled and economically disadvantaged youth. Furthermore, if the use of community services is taught in the high school, youths will be more likely to use resources ranging from community mental health to the Department of Motor Vehicles to public transportion to Planned Parenthood. All of these services are examples of ways in which the troubled youth can, indeed must learn how to be a resource builder. It begins to complete the citizenship process which paid employment substantially sets in motion, but does not entirely comprise. Thus, *resource building* is a skill which can be taught in the inception of the transition phase, perhaps as early as the freshman year of high school, and should transfer to the adult world with some change in who the key players are.

Ecological/Ecosystematic Intervention

All of the examples given thus far are consistent with a philosophy articulated by Hobbs (1982) and the Re-ED approach. In it, emotional disturbance is viewed as an interactive dynamic involving the defining member and several key players who offer varying levels of tolerance for disturbance in that ecosystem. Around a troubled and troubling youth is likely to be found family, peers, community members, co-workers and/or employers whose tolerance for deviance is being exceeded by behaviors which the youth deports. Conversely, the youth has boundaries which are being crossed as well. Interactions which most people can handle in the course of an ordinary day—an angry customer or an offhand and sarcastic criticism by a co-worker—can be perceived as serious transgressions by an emotionally disturbed youth.

An ecological assessment, where the professional identifies all of the key players, is an important first step in facilitating an improvement in the situation. The professional identifies not only the interactions which are clearly unproductive, but other relevant players and dynamics which have bearing. For example, a worker who is chronically late may have a serious falling out with his employer. Rather than rushing to negotiate and problem-solve with these two protagonists, the professional may find that the worker's mother is having him do chores at home, and it is her failure to realize the importance and fragility of the employment situation, and her son's inability to confront her, that are the actual source of disturbance. A thorough ecological assessment is more likely to identify the the best places for intervention and enablement.

Through problem-solving, resource and team building, and with the tools of data-based and behavior analytic instruction in social and vocational skills, the professional in a liaison role between family, school, community, and employer can implement an *ecosystematic intervention*. To successfully enable and to be cost-effective, the intervention must aim to self-terminate when the likelihood of success is greater than half. Frequently, this will mean the use of other services. An enablement plan is a contract, not entirely unlike an individualized education plan or individualized transition plan, which enumerates the services required, the person responsible for its delivery, the person or agency who delivers it, by what date, at what cost, the source of funds, the criterion for successful delivery, and the mode and frequency of follow-up (Hobbs, 1982). This type of assessment and plan assures that the situation is being attended to, and delineates the lines of responsibility (See Figure 4 for an example). At this stage, employers are unlikely participants in such a process, but during the transitional ages when a school is still involved, enablement planning is entirely appropriate.

Insert Figure 4 about here

Programs and Populations

Emotional disturbance is a useful concept, and it is one which can provide some explanation for members in a wide variety of groups and in a wide variety of settings. The basic concepts presented here are intended to have relevance to all of these populations. To some extent, the principles apply to all persons, but clearly the principles need to be adapted for the various subgroups.

For example, the severest of instances, where an individual has many autistic-like behaviors, calls for interventions which look more like conventional supported employment approaches. In St. Petersburg, Florida, collaborations between vocational teachers from the public schools, the university, and Vocational Rehabilitation have facilitatied numerous job placements in all 10 categoeies of jobs from the Dictionary of Titles. Despite their successes, Guetzloe reports that the more severe, autistic-like youhts funtion better in sheltered workshop settings. "Most of our kids are not ever going to go out, . . . get . . . and keep [a real job] . . . We need to look for jobs that do not require socialization for those who are not capable of making it. For those who are, we need [agents] to make the enormous possibilities real for these kids." In contrast, autistic-like high school-aged youths from San Rafael, California have been competitively placed using a supported employment model.

The Community-Based Vocational Training Project in Monmouth, Oregon provides a variety of internship experiences for students classified as Severely Emotionally Disturbed. Most complete a series of training placements and receive some on-the-job support. Competitive employment and job retention are not emphasized by this program at this point. Less severely involved students are served by the Career Ladder Program in San Francisco. Using Re-ED approaches, and collaborations between the school district and the Department of Rehabilitation, continuously available service is offered to high school juniors who complete first a semester of unpaid community-based training, followed by a semester of paid work experience as a senior. All work experience is supervised, using a community classroom model. If students successfully complete the school-sponsored training phase, they are offered lifelong service through a federal demonstration grant and the Department of Rehabilitation. The program currently shows a greater than 85% success rate.

Another instance of severe circumstances partially explained by concepts of emotional disturbance are adjudicated youths. Highly structured programs which include board and camp-like settings report high success rates with these young people. The Job Corps is a Department of Labor program authorized by Title IV of the Job Training and Partnership Act, and serves disadvantaged youths in 105 centers throughout the nation. About forty percent of youths enrolling in the Job Corps have had some contact with the law. Nineteen centers of the Associated Marine Institutes serve adjudicated youth in the Eastern and Southern states. These Institutes provide structured training in marine-related fields with a low staff-to-student ratio and report extgremely low recidivism rates. In the Job Corps, about 25% of the graduates enlist in the military, but in the Marine Institutes, the proportions are much higher.

In the state of Iowa, virtually every adjudicated youth over age sixteen is enrolled in a community-based job training program. In essence, the towns of Toledo and Eldora have assumed problem ownership for the troubled and adjudicated youth of the state, and these two towns whose populations total less than 8,000 provide over sixty on-the-job training sites. After "doing their time," youths are referred to JTPA programs in their home communities.

Yet another group is those with diagnoses of mental illness and frequently placed in psychiatric hospitals. Thresholds is a private nonprofit agency in the Chicago area which accepts referrals from this population, and has adapted supported employment principles to serve these individuals. Beginning with in-house internships, and graduating to enclaves in transitional sites, they have been able to successfully prepare a difficult-to-employ population for the competitive supported employment which comprises the final phase of their program. In 1987, Thresholds placed 420 individuals who collectively earned $529,000. Their program includes job analysis, behavior analytic training, Azrin's job club and social skills training. they are supported as a federal model demonstration project.

This section has provided an overview of some of the problems which are likely to be encountered when attempting to implement a job placement with an individual who is in a discordant system. These problems were presented in the context of principles and strategies which must be utilized to ensure success. While these principles will consistently be relevant to any individual's situation, the wide variety of situations identified as part of emotional disturbance will require the adaptation of those principles. Examples of how individuals from groups commonly identified as including youths with emotional disturbance illustrated different approaches and viewpoints, as well as some of the consistency among them.

Social Skills Training

It would seem obvious that the social skills of emotionally disturbed persons would be critical to their vocational success. In the residential domain, greater social competence among psychiatric patients predicts a greater rate of release from the hospital and superior post-institutional success in the community. With the developmentally disabled population, at least half of all job terminations are related to inadequate social skills (Greenspan & Schoutz, 1978; Hanley-Maxwell & Rusch, 1986). Surely social skills are important to the vocational development of the emotionally disturbed individual. Just how important they are has not been accurately determined. Of greater import, relatively little work has been done to train social skills in vocational settings. Let us now examine the characteristics and status of social skills in vocational contexts.

Training and Outcome

The absence of positive social behaviors and the appearance of antisocial behaviors makes one a poor candidate for employment. A record of antisocial acts like theft and assault will often limit one's chance of being hired. Also, behaviors like theft are emitted covertly and somewhat infrequently, so they are hard to treat and manage. Violence and thievery are highly insulting to the work environment and will usually lead to immediate termination. Thus, because the emotionally disturbed person is a poor candidate for hiring and retention, there has been relatively little research done on social skills in vocational contexts.

What social skills research has been done has focused more on the earlier stages of job procurement. The first stage of job procurement deals with finding a job. Hasazi, Gordon, and Roe (1984) have found that mildly handicapped youth (including emotionally disturbed students) frequently find jobs through their family-friends network. Although job placement services have an effect, they do not result in obtaining nearly as many jobs as through leads from family and friends. Still, given the high unemployment rate of mildly handicapped youth, strategies are needed to connect people with jobs. Jones and Azrin (1978) have developed the now well known Job Club program. Job Club teaches the participant a variety of job procurement skills. The behaviorally-based procedure teaches the individual to identify particular jobs through newspapers and phone calls. Through continuous, protracted contacts, a list of jobs is assembled and interviews are established. A number of emotionally disturbed youth have participated in Job Club.

A second job procurement skill has been taught and researched with emotionally disturbed individuals. Job interviewing is a social skill which involves a dyadic interaction between the personnel interviewer and the job seeker. Kelly has developed an individual (Furman, Geller, Siman, & Kelly, 1979) and a group (Kelly, Laughlin, Claiborne, & Patterson, 1979) training procedure for former psychiatric patients. The training procedure uses the typical behaviorally-based components of social skill training (SST). That is, the trainer instructs and models the desired behaviors, the participants role play or rehearse the stipulated behaviors, and finally feedback (information and/or reward) is provided after the rehearsal. In both studies three behaviors were targeted for training: providing information, expression of enthusiasm, and questions to the interviewer. Each of the behaviors was successively trained with a multiple baseline design. Before training, each of the behaviors appeared at a near zero rate. After the onset of training the appearance of the targeted behaviors increased dramatically.

In SST, the importance of training behaviors during a role play is secondary to having these behaviors generalize to a real setting. In job interviewing, SST it would be critical to produce generalization from the role play to real job interviews. To approximate this situation, Kelly and his colleagues recruited actual personnel interviewers. Unstructured generalization probes simulated an actual job interview. Pre-and post measures were taken of the participants' performance. In general, the participants' performance improved substantially from pretest to posttest. This change was noted in both the specific behaviors trained (e.g., enthusiasm) and in more global, social validity ratings (e.g., ambition, speech fluency, context appropriateness, and likelihood of being hired). The ultimate social validity criterion in job interviewing training is whether the participant obtains employment. In Kelly's group instruction study five of the six participants obtained jobs. In Kelly's individual instruction study, two of the three participants became employed. Thus, Kelly and his colleagues have empirically demonstrated a relatively brief and effective training procedure for job interviewing social behaviors.

In addition to leading job procurement skills, some work has been done in training social skills that will be needed in actual encounters on the job. Sazberg and his colleagues conducted a series of studies to demonstrate the acquisition and generalization of vocationally-related social skills. In the first study, Warrenfeltz et al. (1981) taught four behavior disordered youth to make appropriate responses to instructions, (e.g., "put away those tools"). The student had to respond appropriately in a verbal and motoric fashion, and to avoid negative verbal responses like whining or refusing. A first "didactic" training condition taught the students to distinguish, define, and identity appropriate and inappropriate work-related social behaviors. Data was simultaneously collected in a simulated work setting in the school. Although the students learned each of the trained behaviors, they failed to generalize appropriate responses to instruction the simulated setting. Next, a role-play and self-monitoring training condition was implemented. The students and teacher role played vignettes that could occur in work settings. In addition, students self-monitoring their social responses in the simulated setting. That is, students rated their social responses to the work supervisor. After successful acquisition, the role play and self-monitoring condition produced generalization of appropriate responses to instruction to the generalization setting. Impressively, response generalization was rated to the untrained behavior of appropriate response to critical feedback.

A subsequent study by the Salzberg group (Kelly et al., 1983) similarly trained four behaviorally disordered youth to make appropriate responses to instruction. The investigation attempted to parse out whether role playing or self-monitoring was casual in producing generalization. First, a role play only condition was introduced. Although the students acquired the social discrimination responses, they failed to display appropriate responses to instruction in the simulated, school generalization setting. Subsequently, a role play plus self-monitoring condition induced both acquisition and generalization. The Salzberg studies are unique and impressive in that they identified the critical training conditions to produced generalized social responding among behaviorally disordered youth. The studies are limited in that they were not validated in real work settings.

One study, though, by Breen, Haring, Pitts-Conway, and Gaylord-Ross (1984) taught a number of social behaviors in an actual work setting. A group of four seriously emotionally disturbed-autistic youth had been working in a nursing home and a restaurant. The SST attempted to teach them a number of social behaviors in the breakroom of the workplace. Such behaviors included initiating a conversation, making small talk, and offering coworkers coffee or sugar. A training procedure used nondisabled high school peers to dyadically role play the social exchange with the autistic youth. A script of the sequence of social behaviors in a typical exchange was task analyzed and rehearsed. Training took place in the same break setting, as the generalization was across persons (nondisabled student peers to nondisabled adult coworkers) and not settings. Breen et al. investigated the number of training peers required before generalization occurred with coworkers at breaktime. There was no consistent finding. One autistic student needed one peer trainer, two students required two peer trainers, and a fourth needed three peer trainers before generalization occurred with coworkers.

Future Directions

While little SST research and demonstration has been done in real work settings to date, we should expect a growth in this field. This is because social skills are critical to successful job retention and also indicate a satisfactory work life. If supported employment grows with the emotionally disturbed population, there should be a better means and acceptance of SST in the workplace.

Besides a growth of SST investigations, the nature of the SST may change in future efforts. Past SST work has typically been behavioral component training. That is, antecedent modeling, response rehearsal, and consequent feedback have allied SST closely with the principles of applied behavior analysis. Trower (1978) has suggested that a "process" type of training should produce better generalization. Process SST emphasize the use of cognitive activities. These cognitive processes include decoding the social context, delineating and deciding upon behavioral choices, and self-monitoring and self-evaluating one's performance. Park [illegible] (1988) has successfully trained social behaviors in a work setting using the process model with developmentally disabled youth. One student was taught to imitate and elaborate conversations, as well as to speak clearly (not mumble). The process training successfully generalized to the workplace (restaurant setting and to people (coworkers and customers, as well as maintain at a six week follow-up. Process training thus offers much potential for SST with emotionally disturbed workers.

Relationship development. Another type of social behavior intervention is relationship development. Relationship development may have some common goals with SST, but it proceeds in a different manner. Rather than focusing on discrete behaviors, it examines the roles people play at work and tries to develop more intensive relationships. Hopefully, a certain number of acquantainships and friendships will develop naturally during the person's job tenure. Still, because some jobs are performed in relative isolation, or the behaviors or the stigmatizing label of an emotionally disturbed person may lead coworkers to avoid contact with him, it may be necessary to carry-out interventions which insure relationships formation.

If there is a job coach present at the work site, one of her roles may be to analyze the social network of the workplace. The job coach or counselor may then design ways to integrate the emotionally disturbed worker into this social network. For example, some coworkers may be interested in befriending and supporting the disabled worker. Such support and friendships may develop naturally. In other cases the nondisabled coworker may need to be encouraged or prompted to form relationships. In some situations a coworker may be formally designated as a benefactor for the disabled worker. For example, the Pathways Program for developmentally disabled workers in England (Porterfield, 1984) formally designated a coworker to be a mentor or benefactor. The benefactor may then orient, instruct, integrate, and support the disabled worker. One tangible way to integrate the disabled worker is to analyze the social rituals at the workplace. Often a group of workers have monthly birthday parties for one of their members. It would be important that the emotionally disturbed worker participate in such birthday rituals as he becomes further integrated into workplace subgroups. A benefactor, job coach, or counselor may facilitate such social integration.

Integration into the social network at the workplace is important for a number of reasons. Becoming a productive worker usually entails working cooperatively with one's coworkers. Also, the quality of one's work experience is likely to be related to the formation of friendships at work. Finally, some research has shown social networks to offer social support which provides a buffer against stress (~~Barrera~~ COHEN & WILLS, 1985). The stress-buffer notion should have important implications for emotionally disturbed workers. Competitive jobs place many pressures on employees to work rapidly, perform complex tasks, and adapt to changing tasks and demands. Such pressures may induce stress upon the emotionally disturbed work which may threaten his mental health, cause him to resign, or diminish the quality of his work experience. We are just beginning to understand the social ecology of the workplace. The development of relationship formation and SST interventions should enhance the vocational potential of emotional disturbed individuals. Furthermore, the complimentary intervention focus on the individual and the surrounding ecology is consistent with a comprehensive ecobehavioral perspective.

Summary

The emotionally disturbed individual presents a great challenge to vocational education. It is one thing to teach a few job tasks in an isolated setting; it is quite another to have the person display a myriad of critical behaviors in a real work setting in order to hold a job. Although vocational education for persons with emotional disturbances in a relatively new, yet growing field, an instructional technology is emerging to fulfill the employment and transition initiative (Will, 1984). We have suggested an ecological and curricular approach to vocational assessment and training. Here, the individual is portrayed within a political and educational context. Vocational education cannot only rely on educators, it must also get substantive support from the business world in hiring and funding programs for disabled persons. These programs must rely on the highest level of behavioral technology to manage and suppress disruptive behaviors in the workplace. As has been pointed out, the presence of autosocial behaviors and the absence of positive social skills makes the typical emotionally disturbed person a poor candidate for job placement and retention. Yet, social competence at work can be engendered through the new interventions which foster social skills and develop supportive social relationships. The analysis of social support networks, and particularly benefactor roles in the workplace, hold great promise for enhancing the employability of persons with emotional disorders.

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Social Support and Quality of Life for Learning Disabled and Mildly Retarded Youth in Transition*

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Abstract

A study investigated the transition of youth with regards to quality of worklife, social support, and quality of life. Mildly mentally retarded (MR), learning disabled (LD), and nondisabled (ND) youth were examined during ~~the last year in~~ high school and while attending community college. A cross-sectional design used a 3 x 2 analysis of variance to evaluate their transition on a number of measures. The study found that MR young adults had a relatively high quality of work life. Yet, they did not increase their independence upon entering adulthood with respect to environmental quality of life or social support at home or in the community. Learning disabled young adults had a particularly difficult time in their quality of worklife. The ND youth were consistently superior in giving social support. A continuum of reciprocal support was postulated. Interventions to improve the vocational and social life of LD youth were suggested.

Social Support of Learning Disabled and Mildly Retarded Youth

Considerable efforts have been given to studies examining the social support of nondisabled (ND) persons (Brown, Brady, Lent, Wolfert, & Hall, 1987; Gaylord-Ross, Park, Cameto, & Tappe, 1989; Levinson, 1978; Pearson, 1986; Sheehy, 1976). Studies have consistently shown that social support is positively related to psychological adjustment and well-being and is negatively related to psychosocial stress and physical illness (Cassel, 1976; Cobb, 1976; Cohen & Wills, 1985; Gottlieb, 1983). While this evidence on the positive impact of social support on psychological and physical wellbeing may hold true for disabled persons as well, there has been little research completed with this group.

Social support for disabled persons appears to be important as they are integrated into community life. Empirical data have shown that physical integration alone does not result in the successful social integration of disabled persons (Baldwin et al., 1978; Greshamy, 1983). It is possible that disabled individuals may still remain isolated, with little resulting interaction or friendship development, after they are integrated into the school of the community (Gaylord-Ross et al., 1989). Isolation and loneliness are frequently reported with disabled populations (Baker et al., 1977; Bercovici, 1981; Gollat et al., 1978; Rosen et al., 1977). Social support is suggested as one way to help promote successful community adjustment (O'Connor, 1983). Halpern (1985) emphasizes the importance of designing interventions to enhance the social network system of disabled persons in order to induce a satisfactory quality of life. For disabled persons who are in transition from school to adulthood, social support may serve as a particularly important function while coping with various stressors such as separation from families, acquiring financial independence, locating appropriate housing, and adjusting to work. Persons with disabilities who have richer social networks have been more likely to: a) remain in the community (Gollay et al., 1978); b) transfer to less restrictive settings (Schalock & Jensen, 1986); c) demonstrate independence in self-care skills (Heller & Berkson, 1982); d) earn more money (Rusch, 1986); and, e) advance from sheltered workshops to competitive employment (Melstron, 1982).

In addition to the role of facilitating transition and community adjustment, social support is known to be important in determining one's "quality of life" (Edgerton, 1967; Edgerton & Bercovici, 1976; Landesman-Dwyer & Berkson, 1983; Weiss, 1944). Friends, family, and leisure time activities were found to be the main predictors of happiness (Birenbaum & Be, 1979; Seltzer, 1981).

Despite the reported importance of social support, only a few studies have been completed with disabled persons (Baker, Seltzer, & Seltzer, 1977; Edgerton, 1967; Schalock, Harper, & Carver, 1981). In a study with persons who had left state insitutions and entered community settings, Edgerton (1967) found that many mentally retarded people needed help in passing as competent. Most of these individuals, alone, could not cope within the community, and their greatest concern was with social acceptance. Schalock et al. examined the degree of integration and adjustment of mentally retarded clients who had been placed in independent living arrangements and found that one-third of them reported no friends after five years in the community placement. In a study by Baker et al., mentally retarded adults living outside of institutions reported that loneliness was one of their major problems.

While these studies report similar conclusions, their findings have been primarily drawn from descriptive data. There is a need for more controlled empirical contrasts in this area. The present study attempts to assess the amount and nature of social support provided to disabled persons. Particular attention is given to learning disabled and mildly mentally retarded persons who are in a transition period from secondary to adult educational settings.

When a study intends to empirically assess the nature of social support, it should apply a measurement scale that adequately addresses the elements of this construct. Borrowing Tardy's (1985) framework for social support, the primary elements of the social support construct include: 1) direction (received vs. providing); 2) disposition (available vs. enacted support); 3) descriptive/evaluation (described/evaluated support); 4) content (number of functions); and, 5) network (number of people).

Recent literature has explored current measurement instruments for nondisabled populations (Barrera, 1986; Payne & Jones, 1987; Pearson, 1986; Tardy, 1985), and there are a few scales which specifically address the special needs of disabled individuals (Horner, Newton, Le Baron, Stoner, & Ferguson, 1987; Reiss & Benson, 1985; Wesolowski, 1987). However, the scales targeting disabled populations have been limited to assessing the complete social support system. For example, the Social Network Inventory by Wesolowski does not measure social support functions. Rather, it measures social networks. The Reiss-Benson Social Support Scale for Mentally Retarded Adults attempts to measure the functions of a person's support system in addition to examining certain limited aspects of its structure. However, it restricts the number of individuals considered in the network to a few informal connections, and considers only a limited number of functions. The Reiss-Benson Scale only measures received support, neglecting the giving of reciprocal support (Gaylord-Ross et al., 1989). The Social Network/Support Analysis Form (Horner et al.) is comprehensive in assessing social support. It was designed though, to be used with persons with severe disabilities. Therefore, the present invervention designed a complete social support measure for mildly disabled (learning disabled and mildly mentally retarded).

In summary, the study intended to: 1) develop an instrument which assesses social support in a comprehensive manner; 2) gather information on the nature of social support systems of learning disabled and mildly mentally retarded youths; and, 3) investigate the relationship between social support and quality of life, and between social support and quality of work life. Data was simultaneously collected with nondisabled youth in order to provide a normative comparison with the disabled samples.

Method

Participants

The study involved 126 participants. There were six groups of approximately 20 in the following categories: high school, mentally retarded; high school, learning disabled; high school, nondisabled; community college, mentally retarded; community college, learning disabled; and community college, nondisabled. Special education teachers and community college counselors made the determination of the student's fit into one of our six categories based on information contained in the student's IEP and psychological assessments. The high school disabled participants were all classified as learning handicapped by California State Deparment criteria, with all receiving special education services. The learning handicapped designation includes students with both learning disabilities and mild mental retardation. The community college disabled students were classified as learning disabled or mentally retarded learners based on the California community college criteria. These students received special services offered through the Disabled Students' Program and Services options.

The California State Department of Education's learning disability definition entails a significant discrepancy between achievement and ability. Mentally retarded students had their primary disability diagnosed as mental retardation by a school or community psychologist. The nondisabled students were selected from students in the regular education program who received no special education services. All of the disabled participants were mainstreamed on regular high school or community college campuses. All of these students participated with regular education students for some classes and other school-based activities.

Additional prerequisites for participation in the study included the following: all students needed to work in a voluntary or paid position; the community college students needed to be out of high school for at least one year, but not more than four years; all participants had to be able to understand and respond to the interview questions. The students came from eight different high schools and six different community colleges. All of these sites were either in urban or suburban areas in one of the largest metropolitan areas in the U.S. We approached school districts and community colleges based on our professional contacts. Only 2 districts refused to participate, while 12 engaged in the research. At each site we exhausted all of the potential participants with disabilities who met our criteria. No students declined to participate. A class(es) of disabled and/or nondisabled students was selected at each school site. Each student was paid $5.00 for participating in the study.

A breakdown of the participants by gender, age, and ethnicity appears in Table 1. Although there were proportionately more males in the high school group and females in the community college group, a chi-square statistic (2 X 6) indicated no significant difference across the six cells. Similarly, there were relatively more Afro-Americans at the high school level and more Caucasians at the community college. A chi-square statistic (3 X 6) was calculated across three ethnic groups: Caucasian, Afro-American, remainder (Hispanic, Asian, other). No significant difference resulted.

Insert Table 1 about here

Instruments

We administered three self-report instruments to each of the students. These consisted of a questionnaire developed by our project staff, the Social Support Questionnaire (SSQ) (Park, Cameto, Tappe, & Gaylord-Ross, 1987), and two existing instruments: The Quality of Life Questionnaire (QOL) (Keith, Schalock, & Hoffman, 1986), and the Quality of Worklife Index (QOWL) (Seltzer, 1984).

The SSQ[1] is divided into 3 parts. In the first section the respondent lists their social network by giving the names of as many support persons as possible by domain (residential, school, work, and community). In the second section the respondent states the frequency that various network members offer 17 different types of support. The 17 items are organized into five functional areas: guidance/instruction, affective, self-actualization, crisis support, and material aid. In the third section the respondent states the frequency with which s/he provides reciprocal support to the first ranked network member in each of the four domains. In the second and third sections the respondent ranks the frequency of perceived (P) and reciprocal/giving (R). support on a four-point scale (4: always, 3: most of the time, 2: some of the time, and 1: never).

Two consultants who were experts in test design and social support reviewed the instrument during its early stages of development. In addition, we field tested the SSQ with four mentally retarded adults. They commented on the wording of the questions and the appropriateness of the test items. We revised the instrument based on the comments and recommendations of the consultants.

Reliability and internal consistency was established for the SSQ instrument. A Cronbach alpha test was calculated with the total sample scores in each of the domains for the perceived and reciprocal scores. The eight alpha scores had a satisfactory median of .92 and a range of .83 to .98. In addition, 10 of the participants (MR=8, LD=2) were retested on the SSQ from four to eight weeks from their initial testing. A Pearson r score was calculated for P and R in each of the four domains. The eight test-retest correlation coefficients ranged from .32 to .75 (median = .57). All coefficients were statistically significant (Community P: $p < .005$; the remaining coefficients: $p < .0001$).

The QOL questionnaire (Keith et al., 1986) assesses the degree of environmental control, the level of involvement in the community, and the nature of social relations. Respondents answered each of the 28 items on the questionnaire using a 3-point Likert scale. Each point on the scale is clarified by descriptors of observable behavior or in concrete terms. The QOL questionnaire was standardized on 450 mentally retarded individuals. Its interrater reliability was .83.

Quality of work life was assessed using a version of the Job Descriptive Index (JDI) (Smith, Kendall, & Hulin, 1969) modified by Seltzer (1984) for use with individuals with mental retardation. The JDI is an assessment of job satisfaction that is used widely in research involving nondisabled workers. It measures a worker's satisfaction with (a) type of work, (b) supervision, (c) co-workers, (d) pay, and (e) opportunities for promotion. It provides five subscales and one overall score. The participants responded with yes/no/not sure to a series of simple questions. Matched sets of favorably and unfavorably worded items controlled for acquiescence response bias. The JDI has a split half reliability of .79.

Procedure

Each of the 126 participants completed a battery of the three questionnaires. The participants received the surveys at the school site, during either release time from class, or at appointments during their free time. The participants generally completed the surveys in one to two hours. The mode for conducting the surveys depended on the functional level of the participant. Generally, the MR students required a one-to-one interview, with the interviewer filling in the responses on recording sheets. The LD students responded in a small group, filling in their own recording sheets while an interviewer read the questions. The ND students read and responded on their own after initial instructions were given by the interviewer. The interviewer answered any questions from the group of ND students while they completed the questionnaires.

Results

Quality of Work Life

Table 2 displays the means for the QOWL scores. Separate 3 x 2 ANOVAs (classification x grade) were conducted for the total score and each of the four subscale scores. For the Work subscale there was a significant classification effect; F (2, 119) = 3.8, $p < .03$. All of the post hoc tests conducted in this section followed the guidelines of Marascuilo and Serlin (1988). A series of three pairwise Dunn's t tests compared the three groups (pooled across grade level). A significant t ($p < .05$) found MR > LD, while the other two comparisons found MR = ND and LD < ND. Overall then, MR youth valued their work activities significantly more than LD youth. On the Promotion subscale there was a significant interaction effect; F (2, 119) = 3.7, $p < .03$. A series of post hoc Welch-Aspin and

Dunn's t tests contrasted HD vs. PS within each group. For LD, PS < HS ($p < .05$). For MR and ND, PS = HS. Thus, there was a substantial drop in perceived promotional possibilities for LD youth from HS (the highest score of the six groups) to PS (the lowest score). The Co-Worker subscale had a significant grade effect; $F(1, 118) = 4.8$, $p < .04$; and a marginally significant classification effect; $F(2, 118) = 2.9$, $p < .07$. The Welch-Aspin/Dunn's t tests found no significant differences between PS and HS for the three groups. Yet, it should be noted in Table 2 that the MR-PS score was the largest and the ND-HS was the lowest. The other four scores were clustered together. The Supervision and Pay subscales had nonsignificant effects in their analyses of variance.

Insert Table 2 about here

The total QOWL score had a significant main effect for classification; $F(2, 119) = 3.1$, $p < .05$. Overall, the order of means were MR > LD > ND. Upon closer examination, it can be seen that LD dropped from HS to PS; ND-HS had the lowest score; and MR-PS had the highest score. Overall then, MR young adults had the highest QOWL score. This was largely due to their positive view of their work tasks and co-worker relations. In contrast, LD young adults had a substantial decrease in their QOWL since leaving school, primarily because of their low view of promotional possibilities and pay.

It is interesting to compare these findings with those of Seltzer (1984) with a MR sample. The latter's total score was 142, considerably above the means in the present sample. Since the MR-PS group here had the highest score among the present subsamples (133), we compared its subscale scores with those of Seltzer's. All of the subscales were nearly equivalent except for the higher Seltzer score on Supervision (47:41).

Quality of Life

Environment was the only one of the three subsamples displaying significance. There were significant effects for grade; $F\ (1, 120) = 18.6$, $p < .001$; classification; $F\ (2, 120) = 17.9$, $p < .001$; and a marginally significant interaction effect; $F\ (2, 120) = 2.9$, $p < .07$. A series of Dunn's t tests found PS > HS for LD ($P < .05$) and ND ($p < .01$). There was no HS-PS difference for MR. Thus, the MR youth failed to, while the LD and ND groups increased their environmental independence when transitioning to adulthood.

The total QOL score had a significant classification effect; $F\ (2, 120) = 4.4$, $p < .02$, and a marginally significant grade effect, $F\ (1, 120) = 3.2$, $p < .08$. Inspection of Table 2 shows that the LD and ND scores were higher than MR. Interestingly, the total scores here were somewhat lower than those reported by Keith et al. (1986). Their mildly retarded, LD, and ND groups all scored in the 70s. This is higher than the currently reported range of scores in the 60s. In addition, their moderately retarded sample scored in the upper 50s.

Social Support Questionnaire

Network. Table 3 displays the means for the number of support persons reported on the SSQ in each of the four domains. In the Community domain there was a significant classification effect; $F\ (2, 120) = 6.1$, $p < .01$. Dunn's t tests (pooled across grades) found ND > LD ($p < .01$) and ND > MR ($p < .05$), but LD = MR. The ND students had larger scores than the other two groups. The Work subscale had a marginally significant classification effect; $F\ (2, 120) = 2.6$, $p < .08$. Dunn's t tests (pooled across grades) found ND > LD ($p < .05$); but ND = MR and MR = LD. Both ND scores and MR-PS were the highest. LD-PS had the lowest score. The variance analysis in the Residential domain produced a marginally significant interaction effect; $F\ (2, 120) = 2.6$, $p < .08$. Post hoc tests across grades for each group were nonsignificant. There were nonsignificant effects for the School domain.

Insert Table 3 about here

The total score had a marginally significant classification effect; F (2, 120) = 2.9, $p < .06$. The means for ND were the highest and for LD the lowest. This pattern was particularly evident in the community and work domains. Also, there was a decline in these domains from HS to PS for LD youth.

Perceived support. Three of the five subscales for perceived support at Work attained statistical significance. Material support had a significant classification effect; F (2, 93) = 12.0, $p < .001$. A series of post hoc Dunn's t tests (pooled across grades) showed that ND > MR ($p < .01$); ND > LD ($p < .05$); and MR = LD. Thus, ND youth receive greater amounts of material support than the other two groups. Guidance support had a significant grade effect; F (1, 93) = 4.2, $p < .05$. Dunn's t tests contrasting PS to HS were nonsignificant for each of the three groups. It should be noted in Table 4 that LD-PS received the least amount of guidance support. Self actualization support had a significant grade, F (1, 93) = 4.9, $p < .03$; and classification effects, F (2, 93) = 3.1, $p < .05$. A series of Dunn's t tests found no significant differences across disability groups or grades. Visual inspection shows MR-HS to have the highest and LD-PS the lowest scores. There were no significant effects for the Affect and Crisis variance analyses. The total (aggregate) perceived support score at work had a significant classification effect; F (2, 93) = 4.0, $p < .03$. ND youth received the most and LD youth the least support at work. Low LD-PS scores were notable on the material, guidance, and self-actualization functions.

Insert Table 4 about here

Perceived support in Residence displayed significant effects for all subscales and the aggregate score. Material support had a marginally significant classification effect; F (2, 114) = 30, $p < .06$. Table 4 shows ND to have higher scores than LD, which in turn were higher than MR. There was a significant grade effect for Guidance support; F (1, 114) = 6.4, $p < .02$. There was a significant grade effect for Affect support; F (1, 114) = 10.1, $p < .002$. Dunn's t tests found HS > PS for the MR ($p < .05$) and LD ($p < .05$) groups; with no difference for ND youth. LD-PS has the lowest affect score. Self-actualization support had a significant grade effect, F (1, 114) = 5.0, $p < .03$. Although HS had larger scores than PS for all three groups, none of the three grade contrasts for each group proved significant with a Dunn's t test. Crisis support also had a significant grade effect; F (1, 114) = 4.6, $p < .04$. Again, HS scores were higher for each group, but none of the Dunn's t tests were found to be significant. The aggregate Residential score had a significant grade effect; F (1, 114) = 7.8, $p < .007$. Table 4 shows HS > PS for all three groups. Thus, there is a consistent effect for more social support received at home for high school than community college students.

Perceived support in the Community had a couple of significant effects. Material support had a significant classification effect; F (1, 88) = 11.1, $p < .001$. A series of Dunn's t tests found: LD > MR ($p < .05$), ND > MR ($p < .01$), and no difference between LD and ND. Thus, MR youth received substantially less support in the community. Crisis support also had a significant classification effect; F (2, 88) = 3.3, $p < .04$, and a marginally significant interaction effect; F (2, 88) = 2.7, $p < .07$. A series of Dunn's t tests found: MR > LD ($p < .05$); ND > LD ($p < .05$); and no difference between

MR and LD. Thus, LD youth, particularly those in HS, received the least amount of crisis support. Affect had a marginally significant grade effect; $F (1, 88) = 3.7, p < .06$. Table 4 shows higher scores in HS. The aggregate Community score had a marginally significant classification effect; $F (2, 88) = 2.9, p < .06$. Table 4 shows the total ND score somewhat higher than LD, which was greater than MR.

Finally, perceived support in School had only one significant effect, Material (classification); $F (2, 110) = 3.3, p < .05$. Three pairwise Dunn's t tests found: ND > MR ($p < .05$), with the other two tests being nonsignificant.

An aggregate score across all domains and subscales was tabulated. A significant classification effect for this grand total resulted; $F (2, 120) = 3.3, p < .04$. Table 4 displays the ranking of ND > MR > LD. Of note, LD-PS youth had the lowest amount of perceived social support.

Reciprocal support. A parallel analysis of perceived support was conducted with reciprocal support. In the Work domain there were a number of significant findings. The Material subscale had a significant classification effect; $F (2, 93) = 11.4, p < .001$. Three pairwise Dunn's t tests found: ND > MR ($p < .01$); ND > LD ($p < .01$); and MR = LD. Thus, ND youth gave the greatest amount of support. Reciprocal Guidance also had a significant classification effect; $F (2, 93) = 3.8, p < .03$. An identical series of Dunn's t tests found ND > LD ($p < .01$), and ND = MR, MR = LD. Self-actualization also had a significant classification effect; $F (2, 93) = 3.5, p < .04$. The same set of Dunn's t tests found ND > LD ($p < .01$), and ND = MR, MR = LD.. Crisis support had a marginally significant classification effect; $F (2, 93) = 2.9, p < .06$. Table 5 shows LD crisis scores to be the lowest. The aggregate Work score analysis resulted in a significant classification effect; $F (2, 93) = 4.2, p < .02$. In general, LD youth were giving the lowest and ND the highest amounts of social support in the workplace.

Insert Table 5 about here

There were a number of significant findings for reciprocal support in the Community. Material support had a significant classification effect; F (2, 88) = 13.6, $p < .001$. A series of pairwise Dunn's t tests found: ND > MR ($p < .01$); ND > LD ($p < .01$); and MR = LD. Thus, ND youth gave the greatest amount of material support. There was a marginally significant classification effect for Guidance; F (2, 88) = 3.0, $p < .06$. Table 5 shows ND youth providing slightly more guidance. Self-actualization also had a significant classification effect; F (2, 88) = 3.4, $p < .04$. Table 5 shows a similar pattern of ND greater than MR and LD, but Dunn's t tests reported no significance across pairs of means. The aggregate Community score had a significant classification effect; F (2, 88) = 4.5, $p < .02$. Table 5 shows the prevalent pattern of ND youth giving more support than MR or LD youth.

Residential reciprocal support also had a number of significant effects. Material support had a significant grade effect; F (1, 114) = 6.2, $p < .02$, and classification effects; F (2, 114) = 11.6, $p < .001$. Dunn's t tests across groups were nonsignificant; yet, ND scores were the highest. Guidance had a marginally significant classification effect; F (2, 114) = 2.7, $p < .08$. Table 5 shows higher ND scores. Self-actualization had a significant classification effect; F (2, 114) = 4.2, $p < .02$, and a marginally significant interaction effect; F (2, 114) = 2.7, $p < .08$. Table 5 shows higher ND scores. Reciprocal Crisis had a marginally significant classification effect; F (2, 114) = 2.9, $p < .06$, and a significant interaction effect; F (2,114) = 3.8, $p < .04$. Table 5 shows the MR-HS score to be the highest. The Aggregate reciprocal residential score analysis produced a significant classification effect, $F(2, 114) = 3.6$, $p < .03$, and a marginally significant interaction effect; $F(2, 114) = 2.8$, $p < .07$. Table 5 shows ND to have the higher scores.

Reciprocal support at School had significant findings on every subscale. Material support had a significant classification effect; $F(2, 110) = 23.2$, $p < .001$. A series of Dunn's t tests found: ND > MR ($p < .01$); ND > LD ($p < .01$); and LD = MR. Thus, ND youth gave the largest amounts of material support. Guidance support also had a significant classification effect; $F(2, 110) = 5.0$, $p < .01$. The same series of Dunn's t tests found ND > LD ($p < .05$). Affective support had a significant classification effect; $F(2, 110) = 3.9$, $p < .03$. Yet, none of the pairwise Dunn's t tests were significant. Table 5 shows ND-HS to have the highest affect score. Self actualization had a significant classification effect; $F(2, 110) = 3.8$, $p < .03$. No Dunn's t tests were significant. Again, ND-HS had the largest score. Crisis support has a marginally significant classification effect; $F(2, 110) = 2.6$, $p < .08$. Table 5 shows LD youth to have the lowest scores. The Aggregate School score had a significant classification effect; $F(2, 110) = 6.6$, $p < .002$. Overall, ND youth provided the most and LD youth the least support at school.

An Aggregate reciprocal support score across domains and subscales was tabulated and analyzed. A significant classification effect resulted; $F(2, 118) = 8.3$, $p < .001$. Table 5 shows ND-HS youth provided substantially more and LD-PS less support than any other groups.

Support ratio. A support ratio index was calculated by dividing P1 (the perceived support of the first, highest ranking person listed) by R (the reciprocal support score given to that person). The ratio was calculated within each domain and for each subscale. Variance analyses were subsequently conducted in the same fashion as with the perceived and reciprocal measures. Le Baron (1989) previously found support ratios to be about one for nondisabled persons, i.e., they were giving about the same amount of support they received. In contrast, persons with moderate to severe MR received much more support than they gave (R/P < 1.0). The current research further investigates this ratio concept.

In the Work domain the Material support ratio had a significant classification effect; $F(2, 93) = 4.6$, $p < .01$, and a marginally significant grade effect; $F(1, 93) = 3.1$, $p < .08$. Table 6 shows the ranking ND > LD > MR, with MR-HS being especially low. The Guidance ratio had a significant grade effect; $F(1, 93) = 5.9$, $p < .02$. Table 6 shows PS > HS for all groups, with ND-PS having the only ratio greater than one. The Self-actualization ratio had a significant grade effect; $F(1, 93) = 6.2$, $p < .02$. Table 6 shows PS > HS for all groups. The Crisis ratio had a significant classification effect; $F(2, 93) = 3.3$, $p < .05$. Table 6 displays the order ND > MR > LD. In general, scores vary from .4 to greater than one. ND youth displayed the greater than one scores. Oftentimes disabled youth had scores approximating one. In some cases ratio support increased at postschool.

Insert Table 6 about here

The Community support ratio had a couple of significant effects. The Material ratio had a significant classification effect; $F(2, 88) = 4.3$, $p < .02$. Table 6 shows ND greater than the two disability groups. The Self-actualization ratio also had a significant classification effect; $F(2, 88) = 5.2$, $p < .01$. Table 6 shows the LD groups to be lower than the other two groups. Thus, in the community, ND youth tend to have higher, and LD youth consistently lower ratios.

In Residence, there was a significant Material ratio effects for grade, $F(1, 114) = 4.2$, $p < 0.05$, and classification; $F(2, 114) = 4.6$, $p < .02$.

Table 6 shows ND > LD > MR and PS > HS. The Affect ratio had a significant classification effect, F (2, 114) = 3.9, $p < .03$. Table 6 shows LD to be lower than the other two groups. There was a significant effect for Crisis ratio; F (2, 114) = 3.6, $p < .04$. Table 6 shows that LD again had the lowest score. Overall, the ratio scores within the residential domain were somewhat higher. LD youth often received more support than they gave, when compared to the other groups.

A significant classification effect was found for Material ratio at School; F (2, 110) = 6.6, $p < .002$. Table 6 shows that ND was larger than the two disability groups. The Guidance ratio also had a significant classification effect; F (2, 110) = 4.6, $p < .02$. Table 6 shows the ND group to be larger than the two disability groups. Marginally significant classification effects were found for Affect ($p < .09$) and Self-actualization ($p < .10$). Both subscales displayed profiles where ND was larger than the other two groups. Thus, the larger ND ratio pervaded the school domain.

Discussion

The study produced a number of interesting and sometimes complex findings. The mentally retarded youth viewed their quality of work to be more valuable than the other two groups. The nature of the job tasks appear to be challenging for the MR youth, and just the fact that they were competitively employed might heighten the importance of their job. In contrast, work for learning disabled and nondisabled youth might be viewed as boring, repetitive, transient, and not central to their career paths. The ND youth had a low view of the promotional possibilities of their job. Of interest, the LD view of promotional possibilities dropped significantly from high school to adulthood. Disallusionment might have set in with their experience with dead end, entry level jobs. The LD-PS group, it should be remembered, had the lowest scores on the subscales of work, promotions, and pay, thus reflecting their view of the "slave" nature of their jobs. In point of fact, a national survey (Wagner, 1989) reports LD young adults making at or near the minimum wage.

The quality of life findings were somewhat predictable. The MR youth were substantially lower than the other two groups. Furthermore, the LD and ND groups improved from HS to PS on environmental quality of life, whereas the MR youth remained at the same, lower level. Since the QOL scale taps heavily into one's independent life style, and since MR persons are often carefully supervised, it might be expected that they would have lower scores. Yet, it may be somewhat surprising, and disappointing, that this degree of supervision continued into the adult years.

Social support is a multifaceted notion. A direct, network measure enumerates the number of support persons in each of the domains of one's life. Our aggregate score across all domains indicated that the ND youth had the greatest and the LD youth the lowest number of support persons. Within domains, the ND youth seemed particularly skillful at work and community in constructing a support network. The MR young adults also appeared to have a considerable number of support persons at work. The higher MR work score for social networks cross-validates their high co-worker relations score in QOWL. Again, MR persons appear to be challenged and supported in their competitive jobs. Interestingly, the LD-PS group had the lowest network score at work. This adds to the number of 'lowest' scores in QOWL and begins to paint a particular profile.

The finding that the LD-PS group had the lowest aggregate/total score for perceived support further elaborates this profile. This was apparent in the low amounts of guidance and self-actualization support received at work. Low LD-PS support was not perceived in any other domains or subscales except for guidance and affect at home. The work score might point to the need for vocational, instructional, and counseling assistance in this area.

Mentally retarded young adults report the lowest perceived support at home and in the community. Even though caretakers continue to make decisions for them (QOL findings), their interactions with them are nor viewed as supportive. This is particularly true in the material, affective, and crisis functions. The lower community scores (low perceived and networks) may be due to their insulation from these events. A contradictory finding is the relatively low perceived work support score for MR-PS versus their higher network and QOWL scores. When examining Table 4, though, it appears that this lower domain score is primarily due to material support. Reasonably high scores are reported for guidance, affect, etc.

The reciprocal support scores are rather consistent. The ND youth gave substantially more support than disabled youth. In the community and residential domains the ND > MR = LD pattern was prevalent. At school and work, though, ND give the most and LD the least support. The low R score for LD youth was noticed in the guidance, affect, self actualization, and crisis domains. It appears that a social skills training program which focuses on providing support may be warranted.

Again, a fairly consistent pattern for support ratio emerged with ND having a higher ratio than the disabled groups. The ratios of 1.0 or greater for ND persons replicates previous work in this area (LeBaron, 1987; Newton, 1988). Although disabled groups had ratios that ranged from .17 to above one, their median scores generally fell around .85 (MR = .90, LD = .82). Perhaps there is a continuum of ratio support whereby ND persons give about as much support as they receive (1.0), mildly disabled persons (LD & MR) give about three quarters of what they receive (.75), and persons with more severe disabilities receive much more than they give (< .50).

Although the present and previous data bases have uncovered such relationships, we must await further research to confirm such a numerical continuum. Perhaps of greater interest is how, or is it possible, to design ecobehavioral programs and interventions whereby persons with disabilities are more proactive in offering social support. We certainly encourage such future intervention efforts.

In summary, we have examined youth in transition with a number of quality of life measures. The portrait of a malaise for young adults with learning disabilities was advanced. The poor support and quality of work life for this group might suggest innovative programs. For example, Siegel, Robert, Waxman, & Gaylord-Ross (1989) instituted a longitudinal vocational program for LD youth in transition. They reported that the superior employment rates, pay and status, was due to a post-school support net of vocational services. Their program led to higher rates of employment, better pay, and more positive job changes than a comparable cohort. The present data point to the post-school difficulties of LD youth. It would seem that programs which access career ladder employment and teach the recruitment and giving of social support may prove to be most beneficial.

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Footnote

[1] A copy of the Social Support Questionnaire may be obtained from the first author.

Table 1

Mean Scores for Demographic Data of the Sample.

	High School			Community College		
	MR[1]	LD	ND	MR	LD	ND
Gender						
Male	13	13	8	12	12	7
Female	8	9	10	13	8	13
Age						
	17.3	16.8	17.1	20.4	20.1	20.8
Ethnicity						
Caucasian	8	9	9	13	15	8
Black	6	12	6	8	3	2
Hispanic	3	0	0	0	1	4
Asian	2	0	3	3	1	5
Other	2	1	0	1	0	1

[1] MR = Mentally retarded; LD = Learning disabled; ND = Nondisabled

Table 2

Mean Scores for Quality of Life and Quality of Work Life Measures.

Quality of Work Life

	High School			Community College		
Scale	MR[1]	LD	ND	MR	LD	ND
Work	34.4	31.3	33.1	36.8	29.5	29.5
Promotions	10.3	11.2	8.2	10.3	7.9	9.2
Co-Workers	33.2	32.2	25.6	36.5	33.6	33.2
Supervision	41.4	39.9	36.5	40.8	37.3	38.8
Pay	13.7	11.2	9.8	11.0	9.5	9.9
Total	133.1	125.9	111.2	135.4	117.8	120.5

Quality of Life

Environment	30.2	31.7	34.7	31.2	37.4	39.0
Social	17.1	16.8	16.5	17.4	16.7	16.7
Community	14.9	14.3	14.3	15.0	14.0	13.8
Total	62.2	66.0	65.6	63.7	68.1	69.4

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[1] MR = Mentally retarded; LD = Learning disabled; ND = Nondisabled

Table 3

Mean Scores for Social Support Network Measures.

	High School			Community College		
Domain	MR[1]	LD	ND	MR	LD	ND
Community	1.4	1.9	2.8	1.4	1.4	2.6
Work	1.7	1.7	2.3	2.0	1.3	2.3
Residence	2.5	1.9	2.2	2.2	2.5	1.9
School	2.8	2.0	3.1	2.6	2.5	2.2
Total	8.4	7.5	10.3	8.2	7.6	9.0

[1] MR = Mentally retarded; LD = Learning disabled; ND = Nondisabled

Table 4

Mean Scores for Perceived Social Support Measures.

	High School			Community College		
Subscales	MR[1]	LD	ND	MR	LD	ND
Work						
Material	2.4	3.2	6.9	3.0	5.8	6.9
Guidance	14.0	11.7	13.3	11.6	11.4	12.3
Affect	10.1	9.9	11.6	10.4	9.7	10.4
Self	9.6	7.2	9.2	7.9	7.0	7.4
Crisis	7.2	4.8	6.1	5.9	5.1	5.1
Total	43.3	36.8	49.6	38.8	37.3	43.1
School						
Material	5.7	5.4	7.1	4.1	5.8	7.1
Guidance	13.4	12.7	12.6	12.3	12.9	13.5
Affect	12.8	11.4	13.4	13.0	11.7	11.8
Self	9.6	9.3	9.2	9.8	8.9	9.6
Crisis	8.4	5.9	7.6	6.5	6.1	6.9
Total	49.7	44.7	49.9	47.0	45.4	48.9

Community

Subscales	MR	LD	ND	MR	LD	ND
Material	5.2	7.3	9.7	5.0	8.0	9.2
Guidance	12.5	13.6	14.1	12.1	13.1	13.5
Affect	14.6	14.4	13.7	13.0	13.5	13.5
Self	8.7	10.8	9.9	9.2	9.2	10.1
Crisis	8.9	6.2	9.9	9.1	8.3	8.3
Total	49.9	52.3	57.3	48.3	52.0	54.6
Residence						
Material	8.2	8.9	9.6	7.9	8.9	9.1
Guidance	13.6	13.6	13.4	12.3	11.8	12.7
Affect	14.0	13.9	12.3	12.1	11.4	12.1
Self	10.4	10.3	9.9	9.4	9.2	9.0
Crisis	9.9	9.9	10.0	7.9	9.1	8.6
Total	56.1	55.8	55.2	49.6	52.2	51.4
Grand Total						
	357.4	325.5	407.2	321.2	287.1	371.6

[1] MR = Mentally retarded; LD = Learning disabled; ND = Nondisabled

Table 5

Mean Scores for Reciprocal Support Measures.

	Work					
	High School			Community College		
Subscales	MR[1]	LD	ND	MR	LD	ND
Material	1.0	2.5	5.7	2.2	3.9	5.5
Guidance	11.3	9.0	11.1	10.1	9.6	12.7
Affect	10.2	8.9	10.8	9.2	8.6	10.9
Self	7.1	5.2	7.3	7.3	5.5	8.2
Crisis	6.4	3.5	5.8	4.9	3.9	5.5
Total	35.9	29.1	40.7	33.6	31.4	42.8
	School					
Material	3.2	3.2	8.7	2.5	4.3	7.5
Guidance	11.1	9.2	12.8	9.6	9.6	11.5
Affect	12.0	9.4	13.2	11.2	10.2	11.5
Self	7.2	5.6	8.4	7.3	6.2	7.4
Crisis	7.5	4.5	7.1	5.8	5.0	5.9
Total	41.0	31.8	50.2	36.4	35.3	43.9

Subscales	MR	LD	ND	MR	LD	ND
			Community			
Material	4.2	4.2	8.5	4.4	6.0	9.2
Guidance	12.3	11.1	13.2	10.2	11.8	13.6
Affect	14.1	12.7	13.5	12.2	12.1	13.6
Self	8.2	7.0	9.1	7.4	7.2	9.6
Crisis	8.1	6.0	8.9	8.0	8.1	8.3
Total	46.9	41.0	53.1	42.2	45.2	54.3
			Residential			
Material	4.7	5.6	7.9	5.2	8.3	9.2
Guidance	12.5	10.6	12.7	11.2	11.9	13.1
Affect	13.3	12.0	12.9	12.6	12.2	12.4
Self	8.3	5.8	8.7	7.1	7.5	8.5
Crisis	9.7	6.4	8.9	7.6	8.1	8.6
Total	48.5	40.4	51.1	43.8	47.9	51.8
			Grand Total			
	143.3	136.3	172.6	131.4	126.5	143.4

[1] MR = Mentally retarded; LD = Learning disabled; ND = Nondisabled

Table 6

Mean Scores for Support Ratio Measures.

	Work					
	High School			Community College		
Subscales	MR[1]	LD	ND	MR	LD	ND
Material	0.17	0.50	0.66	0.55	0.49	0.88
Guidance	0.80	0.78	0.83	0.90	0.89	1.11
Affect	1.02	0.90	0.94	0.90	0.91	1.09
Self	0.76	0.73	0.79	1.01	0.84	1.14
Crisis	0.92	0.81	1.01	0.92	0.86	1.39
	School					
Material	0.48	0.56	1.23	0.57	0.54	0.89
Guidance	0.83	0.75	1.04	0.80	0.77	0.86
Affect	0.94	0.82	0.98	0.87	0.86	0.96
Self	0.77	0.64	1.04	0.78	0.75	0.78
Crisis	0.93	0.94	0.92	1.01	0.81	0.94

Community

Subscales	MR	LD	ND	MR	LD	ND
Material	0.61	0.61	0.85	0.70	0.64	1.05
Guidance	1.01	0.83	0.94	0.84	0.89	1.03
Affect	0.96	0.88	0.99	0.93	0.90	1.01
Self	1.01	0.65	0.95	0.81	0.79	0.98
Crisis	0.90	1.14	0.91	0.89	1.30	1.17

Residential

Material	0.59	0.64	0.83	0.66	0.88	0.96
Guidance	0.92	0.78	0.95	0.95	0.95	1.04
Affect	0.96	0.87	1.06	1.04	0.97	1.06
Self	0.83	0.58	0.89	0.78	1.03	0.96
Crisis	0.97	0.75	0.89	1.01	0.87	1.01

[1] MR = Mentally retarded; LD = Learning disabled; ND = Nondisabled

Social Skills Training:
What Professionals Say They Do*

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Abstract

Social skills training (SST) has been an important vehicle in the successful integration of disabled students. The present study attempted to assess how educators are implementing SST with disabled students. A questionnaire was administered to 278 professionals across 10 school districts. There was a general agreement in responses across type of professional and type of student taught. Approximately 60 percent of the educators reported conducting SST. A number of acceptable practices were frequently used; these included: direct observation assessment, behavioral techniques, and functionally important social behaviors. Many desirable SST methods were under utilized; these included: peer-mediated instruction, validated curriculum, and community-relevant behaviors. The major cited impediments for conducting SST were time restrictions and academic requirements. While SST was valued by educators, there appeared to be a need for inservice training through exposure to model programs and validated curriculum.

Social Skills Training: What Professionals Say They Do

Since the inception and implementation of Public Law 94-142, numerous studies have examined the impact of integration upon disabled and nondisabled students within regular education placements. Such investigations have attempted to evaluate the development of positive social relationships between the two groups (Gresham, 1981; Guralnick, 1981; Voeltz, 1982), since proponents of mainstreaming believed that placement of disabled with nondisabled students would yield such benefits. Advocates of such a thesis believed that simple physical proximity with able-bodied age-mates would provide a normalizing standard for disabled students, thereby providing opportunities to acquire a repertoire of social skills, to gain social competence, and to participate in peer group activities. Unfortunately, evidence has indicated the contrary. Gresham (1981) pointed out that disabled students do not naturally acquire a set of social skills through observation of nondisabled peers. Rather, in order for effective social integration to occur students must be provided with instruction, prompting, and reinforcement for successful relationships to develop. Gresham also asserted that:

> Placement of handicapped children into regular classrooms without providing them with social skills, which are critical to peer acceptance, may result in increased social isolation and a more restrictive environment (p. 140).

Other studies have demonstrated that mainstreamed disabled students have infrequent and inconsistent social contacts with nondisabled peers unless social skills training (SST) is an ongoing component of the educational process (Bricker, 1978; Fredericks et al., 1978; Gaylord-Ross, Haring, Breen, & Pitts-Conway, 1984; Kekelis & Sacks, 1988; Walker, 1983).

The purpose of this research was to examine how social skills training procedures are provided to disabled students, as well as how professionals view their role in providing such methods. A questionnaire was developed which asked educators:

1. whether they were conducting structured or infused SST.
2. what behaviors were taught in SST and how they were selected.
3. how or what methods were used to teach SST.
4. where SST was carried out.
5. who conducted SST.
6. what difficulties there were in delivering SST.
7. how they have learned about SST.
8. how important SST is to professionals, administrators, and parents.

The questions were administered to a reasonably large number of educators of disabled students. Comparisons were also made between the type of disabled students taught, the grade level, and the professional service (e.g., special education class teacher, related service professional, resource/itinerant teacher). Therefore, an attempt was made to collect some normative information about the practice of SST with disabled students.

Methods

Instrument Development

The project staff (the four co-authors) generated questions and solutions which addressed the what, who, and other issues delineated above. It was felt that extensive checklists which could be dichotomously scored would best tap the myriad of matters reflecting the implementation of SST. Three Likert scale items were constructed to assess the perceived importance of SST to professionals, parents, and teachers.

After generating the items a panel of three consultants reviewed the instrument. The consultants were professors who had conducted research on SST. Their feedback was considered and modifications were made on the questionnaire. Next, four special education teachers (who did not participate in the formal study) completed the questionnaires. Their feedback about content and clarity led to final revisions. Table 1 presents all of the items on the questionnaire, except for demographic information.

Insert Table 1 about here

School District and Sampling

Through our professional experiences a number of large urban and suburban school districts were contacted. Ten districts agreed to participate in the study: six in Northern California, two in Southern California, one in Hawaii, and one in Illinois. Only one school district, in Northern California, refused to participate.

The questionnaires were delivered to the director of special education, who then mailed the instrument with a cover letter to all professionals in the district who dealt with disabled students. A sample of regular education teachers was obtained by selecting one school in each district (i.e, all regular education teachers in a particular school who taught disabled students). Professionals were expected to return the questionnaire to their director within two weeks. It took about 25 minutes to fill out. A total of 386 professionals received the questionnaire. From that group, 278 educators completed the questionnaires.

Table 2 displays the number of professionals by: nature of service, grade level, and type of disabled student. Each subtable tabulates the sample by profession or student taught. The student categories clustered the disabilities in the following manner:

1. mildly disabled (MD) included: learning disabled, mildly retarded, and behaviorally disordered.
2. physically disabled (PD) included: visually impaired, hearing impaired, and physically disabled.
3. severely disabled (SD) included: moderate, severe, and profound mental retardation and autism.
4. multicategories (MC) was when any two (three) of the above three categories was checked.
5. primary grades were kindergarten through eighth (elementary and middle schools). Secondary grades were ninth through twelfth (secondary school).
6. a number of disability types or grade levels were unspecified by the respondents.

Insert Table 2 about here

The professional subtable was organized in a similar fashion. The four professional categories were tabulated by combining resource teacher and itinerant teacher into one group; and related services from: school psychologists, social worker, school counselor, and occupational therapist. The combining into broader categories for the student and professional subtables was done in order to generate larger sample sizes for meaningful comparison and statistical analysis.

Results

Item Consistency

A factor analysis was conducted for each of the items requiring a checklist response (Qs: 2, 3, 4, 5, 8, 9, 10, 14, 15, 16). The principal components analysis produced eigenvalues for each of the resulting factors within each item. In all items one factor emerged. That is, the eigenvalue of the first factor was relatively large and the eigenvalue of succeeding factors was relatively small. Thus, each of these items is internally consistent, in that all of the subitems are tapping into one overall factor.

Group Contrasts

Contrasts were made across the different types of students and the different professionals. This inquiry examined whether these groups were engaged in particular types of SST (subitems). For example, did teachers of severely disabled students conduct more role playing than teachers of mildly disabled students?

Checklist items. The subitems in each of the checklist items were ranked according to their frequency of occurrence. A Friedman's statistical test across the rankings was then conducted for each group. The chi-square statistic was significant for all of the items (range: $p < .02$ to $p < .0001$). This indicated that the four groups (SD, MD, PD, & MC) substantially agreed (at a better than chance level) on their rankings of the different items.

A similar Friedman's Test was calculated for the three types of professionals (special day class, resource/itinerant teacher, and related services). Again, significant chi-squared statistics ($p < .02$ to $p < .0001$) appeared for each of the checklist items. Thus, the professional groups did not differ in their ratings of the items.

Overall Percentages

Table 2 presents the percentage of professionals reporting their involvement with the different aspects of SST. Percentages for the total sample indicate 64% report using SST in their program (Q1). Most (above 50%) of the social behaviors in Q2 underwent training. Vocationally related social skills had low proportions, probably because only secondary teachers addressed them. Out of classroom behaviors, i.e., hanging out, dating, social events, received little attention. The highest reported behaviors (over 80%) were following classroom rules and cooperation.

The most frequent way to select behaviors for training was from direct observation (85%). Interestingly, only 26% of the professionals used formal assessments to select social behaviors. The special education classroom was by far the most likely place (80%) to conduct SST (Q4). Non-academic (e.g., playground, lunch) as well as academic areas were frequent (about 50%) sites for SST. Interestingly, the regular class was reported as a common (45%) site for SST. Off-campus sites (e.g., home, community) were less frequently cited for SST.

A number of the systematic techniques associated with SST (e.g., prompting, reinforcement) were reportedly used at a substantial level (Q5). Special focus socialization programs (e.g., peer tutoring, buddy-special friends, cooperative learning) were utilized in a third of the cases. More structured SST approaches (e.g., task analyzed scripts, commercial curriculum) were infrequently used. Interestingly, the most commonly used technique in SST research, peer-mediated training, was reported only 10% of the time.

About 60% of the respondents indicated they conducted structured SST sessions (Qs 6 & 7). Most often, these sessions occurred on a daily basis (Q6). The sessions were typically 15 minutes or less (Q7). Direct observation data was the most frequently used recording procedure (Q8).

The special education teacher or aide were the persons most likely to deliver SST (Q9). Again, nondisabled peers had a low level of involvement with the training. When SST is infused into the natural classroom activities (Q10) it most likely appeared in discussion and mainstreaming contexts.

Administrators encouraged the use of SST in a number of ways (Q11). Yet, there were few instances where visits to model SST programs occurred. SST information was acquired through inservice, university courses, conferences, and workshops (Q15). There was little involvement with mentor teaching, reading, or research.

The major difficulty in implementing SST (Q16) was time restrictions. Other frequently reported sources of difficulty were: class size, lack of teacher training, academic priorities, and little family support. Professionals viewed the special education teacher as most responsible for conducting SST (Q17). Parents and the regular education teacher were also mentioned as primary people to ensure that SST is implemented.

Overall Ratings

There were three questions which had respondents rate the importance of SST. They rated it as having a relatively high priority in their own professional responsibilities, Q11: mean 4.9, Likert scale, 1 (very low priority) to Likert 6 (very high priority). They viewed parents giving SST a somewhat high priority (Q12: Mean = 4.0). They also believed administrators had a somewhat high priority for SST (Q13: Mean = 4.4). Overall, professionals rated themselves as placing a higher priority on SST than parents or administrators.

Rating items. A two factor analysis of variance was conducted for the three rating items of importance (Qs 11, 12, & 13). A 3 (grade: primary, secondary, combined) X 4 (student: SD, MD, PD, MC) resulted. For the professional's own rating of SST (Q11), there was a significant student effect; F (3, 227) = 5.5, p < .002. A Scheffe post hoc test indicated that the SD group had a significantly (p < .05) higher score (5.5) than the MD group (4.7). Thus, educators of severely disabled students cited SST as being more important than educators for mildly disabled students. For the administrator priority item (Q13) there was a significant grade effect; F (2, 216) = 4.6, p < .02). The Scheffe Test found that the primary (4.7) and secondary (4.6) groups were significantly higher (p < .02) than teachers who taught both grade levels (3.8). Also the SD group (5.0) was significantly higher (p < .05) than the MC groups (4.3). There were no significant differences for the parent item (Q12).

Discussion

Professionals appear to view the training of social skills as an important endeavor. Yet, the implementation of SST appears to be an inconsistent undertaking. For one, although nearly two thirds of professionals state that they teach social skills, a third say they do not. Given the importance of social behavior in school performance, peer acceptance, and successful employment, certain minimal quality standards might be advanced to ensure that all professionals deliver and all disabled students participate in SST.

Professionals appear to be addressing some of the important and commonly trained social behaviors (e.g., initiations) in predictable settings (e.g., free play). Yet, there is relatively little training reported for non-school behaviors (e.g., dating) in community settings. This may be a cause for concern given the recent emphasis and purported advantages of community-based training (Horner, McDonnell, & Bellamy, 1986). Perhaps the most discomfiting finding was the rare use of nondisabled peers in SST efforts. It should be remembered that our SST research base has largely been conducted with (Strain, 1986), and shown the advantages of peer-mediated approaches (Sacks, & Gaylord-Ross, 1989). Furthermore, other documented training approaches, e.g., peer tutoring, cooperative learning, were only being used in about a third of the cases. There appears to be a need for further knowledge dissemination and implementation efforts with SST.

With respect to quality of instruction, a considerable proportion of behavioral SST techniques were reported to be used, e.g., positive reinforcement. Yet, 40% of professionals do not conduct structured SST sessions. Two thirds of the respondents reported infusing these techniques into their activities on other topics. To our knowledge, there is no research literature demonstrating the efficacy of SST procedures with this infusion method. There is certainly a need for observational studies to test the effectiveness of infused SST.

With heightened mainstreaming efforts fueled by the regular education and school reform initiatives, one must ask about the status of SST in regular contexts. Professionals report here that the special education teacher and the special education classroom is the primary place where SST occurs. Yet, a substantial proportion of respondents indicated the importance of SST being conducted in regular education settings by regular education teachers. In practice, Sacks, Hirsch, Russell, and Gaylord-Ross (1990) found little SST when observing regular classes. Still, when so designed, a number of integration models like cooperative learning (Johnson & Johnson, 1989) and ALEM (Wang, & Birch, 1987) have reported attaining effective socialization experiences. Thus, there may be a wide gap between model and common practice. The very low (10%) reported usage of commercial SST curriculum bodes poorly for the contemporary implementation of validated models. Furthermore, time restrictions and academic requirements were two of the most frequently sighted barriers for implementing SST. Future research might further examine the nature of the impediments in the regular and special class.

Certain findings from the survey may point the way to improving the prevalence and quality of SST in both special and regular settings. Although administrators appear to value SST and certain staff training activities have been engaged, there appears to be a need for even further developments. More direct contact with exemplary teachers of SST and their classroom sites might be offered. Instructional materials and curricular products may be better provided and explained. The finding that teachers of severely disabled students rated SST higher in their professional responsibility than teachers of mildly disabled students may indicate that this method was emphasized to a larger degree in the former's preservice or inservice training. Staff training efforts may thus make a difference in the implementation of SST. In summary, the present data points to the partial implementation of SST, the under utilization of validated practices (e.g., peer-mediated SST), and the directions in which future staff training efforts may take. With the gradual movement toward the least restrictive environment at school (Danielson, & Bellamy, 1988), it is critical that effective socialization experiences are accessed in these settings.

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Table 1
Social Skills Questionnaire and Respondent Percentages for Checklist Items.

SOCIAL SKILLS IMPLEMENTATION PROJECT (SKIP)

SKIP Questionnaire

1. **Given that social skills training (SST) is:**

A systematic approach to teaching a series of behaviors that enable the individual to effectively interact with persons within their home, school, and community.

Do you teach **SST** within your school program?
%
_64__ yes
_33__ no

2. Do you teach any of the following **social behaviors**? Please check those that apply:
%
_76__ maintaining eye contact
_65__ body posture
_65__ positive initiations
_58__ teaching nonverbal gestures (smiling, body posture, nods, etc.)
_68__ conversation skills
_84__ following classroom rules, for example:
    __65_ raising hand for questions
    __74_ not interrupting
    __79_ following directions
_77__ sharing materials
_84__ cooperation (sharing responsibilities, working with a partner)
_70__ social problem solving
_65__ friendship skills (making and sustaining)
_61__ assertion skills (resisting peer pressure, stand-up for own rights)
_38__ social skills for employment
_71__ giving positive feedback (complimenting)
_67__ receiving positive feedback
_46__ giving negative feedback (constructive criticism)
_50__ receiving negative feedback
_76__ respect for authority figures
_23__ job interviewing skills
_28__ asking for feedback (from peers or authorities)
_20__ dating skills
_31__ hanging out in a group
_ 9__ attending social events (dances, meetings, etc.)
______ other
Describe______________________________________
_14_ none of the above

3. How do you select specific social skills to teach?

__26_ from assessment results
Specify____________________________________
__37_ suggestions from regular classroom teacher
__27_ suggestions from special education teacher
__38_ suggestions from counselor, psychologist, other
Describe____
__36_ student initiated
__47_ parental suggestion
__85_ direct observation
__62_ written IEP goal
__ 8_ other
Describe_______________________________________
__43_ Infused as part of existing curricular content
__14_ not applicable

4. Where are social skills taught? Please check any of the following that apply:

__45_ in the regular classroom
__80_ in the special education classroom
__35_ in therapy; for example, speech therapy
Describe:____
__47_ on the playground
__51_ lunch or mealtimes
__56_ free time
__54_ in content areas (social studies, art, physical education, music, etc.)
__24_ at home
__31_ in the community
__15_ after school activities
__14_ computer lab
__ 6_ science lab
__11_ motor development room
__29_ counseling sessions
__28_ other (hallways, office, etc.)
Describe: ______________________________________
__ 1_ not applicable

5. How are these social skills taught? Please check any of the following that apply:

__83_ cueing, prompting, coaching (verbal or nonverbal)
__84_ on an individual basis
__77_ in small groups
__66_ with the entire class
__67_ by infusing SST into natural instruction (spontaneously throughout daily activities)
__19_ structured SST sessions
__33_ mainstream into regular class
__47_ role plays (behavioral rehearsals)

__67_ verbal prompting
__64_ live modeling (verbal and physical)
__21_ audiovisual modeling (films, video)
__78_ reinforcement (positive, negative)
__15_ task analyzed response behavior
Describe: ______________________________
__10_ commercially produced curriculum
Describe: _______________________________
__34_ practice in the natural environment (community, home)
__18_ homework assignments
__37_ generalization and maintenance (carry over skills to real settings, transfer of skills to real settings)
__39_ cooperative learning groups
__37_ buddy programs (special friends, pals, benefactors)
__19_ disability awareness program (e.g., kids on the block)
__27_ peer tutors (nondisabled peers teach content areas)
__10_ use of peer-mediated SST (nondisabled peers teach SST)
__14_ use of competent disabled role models
__34_ assertive dicipline
__30_ cognitive problem solving
__31_ student self-monitoring
__27_ cooperative learning groups
__ 1_ other_____________________________________
__14_ not applicable

6. Estimated number of structured sessions of SST per week:

__13_ once a week
__ 8_ 2 times a week
__ 7_ 3 times a week
__26_ daily
__40_ not applicable

7. Amount of time per session for SST:

___25__ 15 minutes or less
___13__ 30 minutes
___13__ 1 hour or class period
___39__ not applicable

8. Is data collected on SST? If so, how?

__51_ observations
__11_ ratings
__15_ graphs or charts
__ 2_ statistical analysis

__18_ anecdotal recordings
__22_ not applicable
__ 3_ other

9. Who delivers SST?

__27_ regular classroom teacher
__67_ special education teacher
__23_ coordination between special education and regular class teacher
__43_ classroom aide
__26_ school psychologist
__14_ school counselor
__14_ social worker
__29_ speech and language therapist
__22_ parents
__19_ nonhandicapped peers
__17_ same disability peers
__ 4_ consultant
__10_ other
Specify____
__13_ not applicable

10. If SST is infused into the natural classroom curriculum, please indicate in what way(s) this occurs:

__38_ mainstreaming
__51_ classroom discussions
__ 3_ research projects
__20_ dramatic play
__17_ awareness curricula (Kids on the Block, Magic Circle)
Specify____
__ 8_ commercially prepared curricula (DUSO, Magic Circle)
Specify____
__ 8_ other
Describe____
__16_ not applicable

Estimated number of infused interactions per week; for example: 5, 15, 45, etc.:

____

11. On a scale of 1 to 6, with 1 as low and 6 as high, how would you rate teaching SST as a priority in your professional responsibilities? Circle one:

1	2	3	4	5	6
very low priority		medium			very high priority

12. On a scale of 1 to 6. with 1 as low and 6 as high, how would the **parents** of your students rate SST instruction as a priority in their childrens' programs? Circle one:

1	2	3	4	5	6
very low priority		medium			very high priority

13. On a scale of 1 to 6, with 1 as low and 6 as high, how would your **administrators** rate SST instruction as a priority of your program? Circle one:

1	2	3	4	5	6
very low priority		medium			very high priority

14. In what ways have your **administraton** promoted the use of SST?

__29_ provides in-service training
__39_ encourages teachers to implement SST
__32_ encourages teachers to share ideas about SST
__ 9_ allows time for visitations to model SST programs
__46_ encourages teachers to emphasize social skills as well as academics
__10_ participates in SST research
__ 4_ other
__21_ not applicable
__ 3_ other

15. If you have received in-service training or coursework on SST within the last five years, please indicate where:

__21_ university personnel preparation programs

__23_ school district in-service programs
__23_ conferences
__22_ workshops
__ 5_ individual reading
__ 5_ mentor teaching
__ 4_ participation in research projects
__16_ other ______________________________________
_____ not applicable

16. Check some of the difficulties with implementing SST?

__10_ lack of space
__55_ time restrictions
__14_ limited special education teacher availability
__15_ lack of communication between special education teacher and regular education teacher
__27_ size of class
__11_ limited knowledge of special needs of persons with disabilities
__23_ overly protective adults and/or peers
__33_ lack of pre-service and in-service teacher training
__15_ finding competent disabled role models
__10_ finding nondisabled peers to mediate or tutor
__31_ nonsupportive network at home
__11_ nonsupportive network at school
__14_ type of handicap (for example, visual, physical)
__30_ academic priorities
__12_ insufficient direction and organization in mainstreamed classroom
__12_ physical set up of mainstreamed classroom
__13_ administrative obstacles
__18_ limited opportunity to engage in peer play
__23_ insufficient adult assistance to facilitate peer interactions (during recess, lunch)
__19_ ineffective SST curriculum in programs
__15_ students too low functioning to implement SST
__12_ other
Specify____________________________________

Now please go back and **prioritize** the items you have checked in order of importance, with number 1 as the highest priority. Write the priority number next to the check mark.

17. In your opinion, who should have the primary responsibility to ensure that SST is implemented?

__53_ special education teacher
__25_ regular education teacher
__12_ school counselor
__12_ school psychologist
__17_ administrator
__36_ parents

Table 2

Repondents to Questionnaire According to Professional Service, Grade, and Type of Student.

	Type of Student			
Grade	Mildly Disabled	Severely Disabled	Physically Disabled	Multiple Category
Primary (P)	64	25	33	6
Secondary (S)	37	15	20	14
Both P & S	12	1	18	4
Unspecified	3	5	0	6
Total	**116**	**46**	**71**	**30**

	Professional Service			
Grade	Special Education Class	Resource/Itinerant Teacher	Related Service Specialist	Regular Education Teacher
Primary	62	35	5	42
Secondary	40	9	5	20
Both P & S	7	21	5	3
Unspecified	7	0	2	2
Total	**116**	**65**	**17**	**67**

Student-Centered Variables: Intervention

Gaylord-Ross, R. (Ed.), (1989). Integration strategies for students with disabilities. Baltimore: Paul H. Brookes Publishing Co.

INTRODUCTION

Robert Gaylord-Ross

Integration Strategies for Students with Handicaps is a textbook that provides practical information about persons with disabilities. It should serve as an introductory text for regular education and special education teachers in training. It can also be used in an advanced methods course that addresses particular types of disabilities and teaching approaches.

This volume is quite different from a typical introductory book. Most "intro" books offer broad surveys of the characteristics of different types of disabilities. Some may have a research focus in presenting the latest empirical findings. The present text has taken the tactic of emphasizing a description of *actual teaching techniques*. The authors believe that beginning students need a text that will provide them with effective procedures that they can use in real classroom settings. The core of each chapter, therefore, describes a number of such techniques that have been tried and validated in the field. The chapters also provide related information about the characteristics of individuals with different types of disabilities, but the major emphasis is on instructional techniques.

OVERVIEW OF INTEGRATION

Almost all professionals in the field agree that enabling students to attain independence is the most important goal for special education programs. Full independence or partial independence ultimately means performing successfully in normal environments. In the past, persons with disabilities have often been placed in large state hospitals, segregated all-handicapped schools, and sheltered work settings. During the past 20 years, though, an "integration" movement has developed that has progressively moved persons with disabilities into regular public schools, community apartments and normal domiciles, and nonsheltered employment. Although most professionals agree upon these placements as ultimate goals, there is a difference of opinion in the field with regard to how fast one should move an individual from more segregated to more integrated placements. The Education for All Handicapped Children Act (Public Law 94-142) asserts that a student should be placed in the least restrictive environment. Often there is professional and/or parental disagreement in determining just what is the least restrictive, or most appropriate integrated setting. Fortunately, as each year passes one sees more indisputable demonstrations of disabled people succeeding in the most integrated settings (e.g., a deaf-blind youth working for pay in a pizza parlor).

It is the purpose of this book to present a number of real-life illustrations of integration. The reader should get a feel for integrated placements and activities as she or he reads about the pupils, settings, materials, teaching procedures, and evaluation design in each chapter.

A more recent development and controversy in the field has been called the regular education initiative (REI). REI is a further extension of the integration principle. It states that most handicapped pupils should spend almost all of their time in the regular education classroom. Under

REI, there would be few, if any, self-contained classes for handicapped students. Administratively, REI would have special education totally subsumed within regular education. That is, there would be no separate special education infrastructure of directors and other administrators. Although REI is currently quite controversial, probably some form of this "radical" integration plan will emerge in future years. The current text provides numerous examples of how REI can be implemented in actual school districts and classrooms.

ORGANIZATION OF CHAPTERS

Most chapters in the text are organized into four parts. An introduction provides an overview to the type of disability or the instructional process to be addressed. Often disability characteristics or research findings are presented here. The second section describes the author's educational model for service delivery. The model carefully addresses how integration will be accomplished. It also sets a context for the subsequent instructional activities. The model section, in particular, tries to show how specific activities would fit within a comprehensive integration system. The core of the chapter consists of a description of five or six instructional activities. The reader should be able to relate these activities to actual pupils they have known or will know in the future. At minimum, the reader will get a sense of the educational process of disabled persons. The final section reviews the material in the chapter and suggests future directions for research and practice. In addition, study questions are included. Instructors and students may use these questions for homework assignments or class review.

OVERVIEW OF SECTIONS AND CHAPTERS

The book is divided into three sections. The first section of the book addresses the education of students with different types of disabilities. The authors describe characteristics of the disabilities, and illustrate effective integration models and activities. For example, until the passage of PL 94-142, students with severe disabilities were, by and large, not served by the public school system. Children either stayed at home or attended privately run schools. The new federal law guaranteed all students, no matter how severe their handicaps, a free and appropriate education. Even though all students subsequently received an education, most were placed in segregated schools (i.e., schools serving only handicapped pupils). A major movement in this field, led by Lou Brown and The Association for Persons with Severe Handicaps, was to advocate for integrated school programs. Alison Ford was originally a teacher in Madison, Wisconsin, one of the pioneer sites for such integrated education. In Chapter 1, Ford and Davern describe a wide array of integration activities. They give particular attention to friendship development among severely disabled and nondisabled peers.

The largest group (approximately 80%) of special education students have mild or learning handicaps. In some ways this group has provided the most challenges to the field. Because the curriculum and ability level of the learning handicapped student overlaps considerably with nondisabled students, there are differences in opinion with regard to how much time the learning handicapped student should spend in a regular or in a special class. As stated earlier, proponents of the regular education initiative feel that almost 100% of the student's time should be in the regular class. In Chapter 2, Doorlag presents a number of activities that successfully mainstream the learning handicapped pupil into regular settings. The activities should be pertinent for special and regular educators alike.

When the public thinks of the term *disability*, they usually associate it with persons having physical or sensory impairments. Physically disabled persons often have a wide range of medical and mobility problems. Originally, this necessitated their placement in highly supervised, segregated programs. Over time, it has been shown that students with severe impairments can be served in integrated settings. For example, an earlier barrier to integration was the contention that special therapy services could only be efficiently provided in segregated, therapeutic settings. Campbell's transdisciplinary model, in Chapter 3, has professionals learn to implement some of the specialized skills of other professionals. Such transdisciplinary implementation permits a treatment to be delivered for greater time periods and in different situations with a number of persons, and thus allows for the successful integration of students with physical disabilities. Campbell also emphasizes the importance of involving nondisabled peers in facilitating interactions with and enabling the integration of students with physical disabilities. Several activities illustrate ways in which teachers, other professionals, and parents can help to initiate and sustain the process of integration.

Visually impaired students have often been limited in their social interaction skills. They may have difficulty reading social cues or maintaining a proper physical distance during conversations. Such impairment-related social difficulties do not preclude school and community integration. In Chapter 4, Sacks and Reardon describe a set of activities that socially engage the visually impaired student in the public school. For instance, social skills training is often the enabling activity that teaches students how to participate in prolonged interactions.

Each disability group offers its own particular challenges in integration. While hearing impaired individuals are certainly capable of being integrated, many have chosen to form educational and social groupings almost exclusively with other persons with hearing impairments. That is, a hearing impaired or Deaf culture has been defined by its participants. Members of the culture are quite sensitive to the oppression of their culture by the majority hearing culture. Reiman and Bullis, in Chapter 5, delineate a model for integration that respects and balances integration in both cultures. Such biculturalism is an appealing approach for those with disability, ethnic, and racial differences.

Students with behavior disorders are probably considered the most intrusive on their surrounding environment. In general, persons with disabilities often evoke the empathy of others—yet the person who steals, assaults, or deceives usually elicits the enmity of those around him or her. Although there has been a general trend toward integrating students with disabilities, in many cases students with behavior disorders are being increasingly segregated in residential and school facilities. In Chapter 6, Casey-Black and Knoblock present a number of integration activities based on sound behavioral and curricular approaches. Fortunately, there is a technology to teach and support such pupils. Yet, behaviorally disordered students often have few advocates. This, coupled with the appearance of highly intrusive behaviors, often leads to incarceration or other further segregation.

Undoubtedly the largest influx of students with special needs is coming from the migration of ethnic groups from Asia and Latin America. Bilingual and bicultural special education is a rapidly emerging field, probably fraught with more questions than answers. As with persons with hearing impairments, issues arise as to how one can balance the culture of origin with the mainstream culture's values and behaviors. In Chapter 7, Plata and Chinn describe a wide range of activities that adapt curricula for bicultural students. Undoubtedly successful integration strategies for bicultural students will further develop. It is likely that the more critical issues of bicultural education will evolve at a political level. That is, citizens and politicians of a conservative political persuasion have rejected and tried to eliminate bilingual education. Since previous immigrants were immediately forced to assimilate within the Anglo-dominant culture, conservative thinkers feel that there should be similar expectations for current emigrés. Proponents of bilingualism and biculturalism feel that their approach offers a balance between two diverse cultures, while enabling individuals to maintain their historical identity.

They also feel that such approaches offer a more effective way to teach academic and other school-related curricula, as the student gradually acquires the new language and culture.

The second section of the book offers innovative techniques in integration. It concerns generic integration services, those that cut across a particular type of disability. The services often entail heterogeneous groupings of persons with different types of disabilities (or no disabilities), functioning level, and age. An increasing data base is emerging that such heterogeneous groupings allow students to learn and perform successfully, as well as serve as a vehicle for social integration.

Historically, the first integration attempts were carried out with preschoolers (Bricker, 1982). In fact, most of the empirical research demonstrating social integration has been conducted in university-based, early childhood classrooms (e.g., Shores, 1987). Although early childhood research has been in the vanguard, required preschool services lagged behind mandated services for school-age, handicapped pupils. Just recently, PL 99-457 has encouraged the development of preschool services in each of the participating states. It is not yet clear how widespread these services will ultimately be. In Chapter 8, Hanson and Hanline review some of the history and recent developments in early childhood special education. They describe a number of activities that involve not only students, but parents as well. In fact, early childhood programs have a very strong parent involvement component. Parent involvement, like transdisciplinary planning, guarantees that instruction will be carried out across many settings and persons. This increases the chances that the learned tasks will generalize and be maintained.

Early childhood special education has operated on the premise that the earlier a child receives intervention, the greater the likelihood that the child's growth and development will accelerate. The past 30 or more years of research have largely supported the efficacy of early childhood intervention. That is, the earlier and more intensive a child's program, the more likely the child's level of functioning will increase. In some cases the person might grow up to not be disabled at all. More likely, the person might improve cognitively or socially so that he or she might, for example, read at a significantly higher level.

The field of vocational special education is typically associated with services at the higher end of the age spectrum. Career and vocational education usually means training for a job during adolescence. Yet, effective career education programs encompass the life span; they begin at an early age and continue through adulthood.

The vocational special education field has been recently fueled by the federal initiative to successfully "transition" disabled youth from school to adulthood. In 1984 Public Law 98-199 established a transition initiative to increase the rate of employment for school leavers and disabled adults (Will, 1984). Some exciting developments have appeared with the "supported employment" of persons with severe disabilities. Until recently, this population was thought incapable of nonsheltered work. It has been shown, though, with the presence of a teacher or job coach at the work site, that individuals with severe disabilities can be productive workers. In Chapter 9, Gaylord-Ross describes a wide range of vocational activities that should prepare the student for successful employment. Interestingly, persons with mild handicaps may sometimes have a poorer prognosis for job retention than individuals with severe disabilities. Thus, successful programs such as Job Club have taught clients to seek, interview for, and procure competitive employment.

Social skills training has been the best empirically documented technique to foster social integration. Influenced by the previous work of Shores and Strain, Chapter 10 authors Brady and McEvoy describe the different ways to promote social interactions between disabled and nondisabled students. Peer-mediated instruction was the earliest technique used to teach social skills. Peer-mediated instruction teaches a nondisabled student to participate in play and other social interactions. After being trained, the nondisabled peer enters the integrated environment and engages a disabled peer in a variety of social interactions. As a function of these exchanges, the disabled peer should become more socially skillful in responding to others, sharing play materials, and so forth. Another tactic advanced by Gaylord-Ross and Haring (1987) is to focus the initial training on the disabled student. Here, the student may be taught to greet or converse during role play with nondisabled peers. When successful, the disabled student will generalize these newly learned behaviors to real social settings. Social skills training should continue to be a powerful technique for integrating the disabled student. Future research should ask how it may be implemented by classroom teachers and how the learned social behaviors can generalize more widely to natural settings (McConnell, 1987).

A major barrier to school integration is the wide variety of disabled and nondisabled students that a teacher may have to instruct in a particular classroom. Gerber and Semmel (1986) assert that a teacher makes a cognitive decision either to advance the average level of the class's performance or to reduce the difference (or variance) between the highest and lowest performants. Increasing the mean achievement of the class usually leads to spending less time with lower achieving students. Reducing pupil variance involves spending more time with these lower performing students (at the expense of the average or above-average pupils). In either case there is a perplexing puzzle to be solved by the classroom teacher. In fact, one solution in the past was to refer the disabled student out of the regular class into a special class. This referral led to a reduction in pupil variance (cognitive and behavioral) and made the class more manageable for the teacher in terms of curriculum focus and behavioral discipline.

The regular education initiative, as well as the least restrictive environment principle, calls for disabled students to spend maximal proportions of their school day in the regular classroom. Given the problem of pupil variance just mentioned, cooperative learning offers an appealing solution to classroom integration. Cooperative learning entails the formation of mixed-level groups of students to accomplish particular tasks. A group of four to eight students may contain individuals who are gifted, average achievers, low achievers, mildly handicapped, and moderately handicapped. The group must accomplish a particular task, such as publishing a school newsletter. A division of labor is organized so that different students engage in different talks according to their abilities. The group is rewarded as a whole for task completion. Thus, everyone is dependent on each other to attain a superordinate goal. In Chapter 11, Johnson and Johnson show that such cooperative groups can accomplish academic and other tasks. Most important, cooperative groups should promote intense and amicable interactions among its members. Students with disabilities, for example, are respected for their necessary contribution to the group endeavor. Such numerous cooperative interactions with one's peers contrasts with a lecture-format class where most of the interactions are from the teacher to the student (or with a seatwork format where the student works quietly and alone on some worksheets). Conceivably, much or part of a class's time could be spent in such cooperative groupings. Social integration would certainly be fostered under these circumstances.

Perhaps the most promising breakthrough in special education will lie in the innovations and applications of new technologies. Microcomputers have certainly been the new technology receiving the most attention. Microcomputers have been adapted so they are accessible to persons with sensory and physical impairments. Software has been developed that is particularly effective for persons with cognitive impairments. The "interactive" characteristics of the computer have been enhanced so that the student receives corrective feedback and emits creative solutions to challenging problems.

Yet, microcomputers have sometimes been criticized for isolating the student from peers and teachers. Such man-machine interactions will not necessarily produce a socially skillful individual.

Some research by Semmel has shown computers are mostly used for isolated drill-and-practice routines with special education students.

In Chapter 12, Wilson, Casella, and Wilson describe an array of activities that capitalizes on the dynamic properties of microcomputers. These activities demonstrate how curricula are adapted by the microcomputer to enhance instructional power. They also show how the interactive problem-solving capabilities of the computer can be assessed. Most important, Wilson et al. make clear that the computer does not necessarily entail isolated, individual work with a machine. There are a number of ways that small group encounters and active social exchanges may revolve around the computer. Thus, the computer may not only be a powerful learning tool, but also an effective agent to promote social integration.

The third section deals with the ecology of delivering services to persons with disabilities. More and more, investigators are looking beyond the purview of the individual to the macrosystem in which the person functions. Such ecobehavioral transactions play a role in determining issues dealing with labeling, placement, treatment effectiveness, and so forth. Thus, the book concludes by examining the total system as it transacts upon and affects the individual.

Peck, Richarz, Peterson, Hayden, Mineur, and Wandschneider, in Chapter 13, begin this macrosystem analysis by describing how systems change efforts may evolve in early childhood education. There are many concerns, of parents and professionals alike, as an integrated system evolves. Peck et al. describe this evolution through qualitative or anthropological research methodology. This approach permits the researcher to view the world through the eyes of its participants. Findings thereby uncovered will enable professionals to develop more powerful systems change interventions.

When converting to an integrated system, a question always arises as to at what level the change should begin. Historically, parents have often provided the initial impetus to rock the foundations of the status quo. In other cases, individual teachers may move their students toward more integrated and community-based training experiences. Probably, though, it is ultimately imperative for top-level administrators to support and lead systems change efforts if there is to be any lasting and substantial effect. In many ways the tone as well as the policy is set by one or more administrators. Administrators have too often been reactive rather than active leaders of change. In Chapter 14, Wilson advances a model for administrative systems change. He states how to involve all of the different factors (e.g., parents) in integration efforts. The chapter carefully articulates administrative roles in facilitating the regular education initiative.

When examining the macrosystem of service delivery, it becomes important to consider the community. Independent living for disabled adults primarily means both surviving and enjoying life in the community. In terms of instruction, research is showing that a substantial amount of training needs to occur in the criterion community environment. Disabled students typically do not generalize from an artificial or school setting to real community contexts such as shopping malls, banks, and restaurants. At minimum, teachers need to coordinate their efforts with key community members such as parents and recreational providers. What is learned at school should be practical at home (and vice-versa). Chapter 15, by Taylor and Knoll, advances a model for a continuum of community services. New program models such as self-advocacy are described; self-advocacy permits disabled consumers to make choices in determining goals and life-styles for themselves. The encouragement of choice making in the community should maximize the independence of persons with disabilities.

PL 94-142 guarantees the legal right of parents to participate in the planning of the educational program of their child. This process is formalized in the individualized education program (IEP). Although parent participation has grown since the passage of this law in 1975, there is still too little involvement of parents in the educational process. Educators and administrators often give only lip service to parent involvement. In Chapter 16, Comegys presents a personalized view of her daughter and of her own role as a parent in the educational process. While differing considerably in style from the other chapters, it offers an inspirational account of parent-child involvement.

SUMMARY

Integration Strategies for Students with Handicaps offers a tested set of integration activities for the reader. The introductory student should get a sense of effective teaching practices to use with disabled students. General background information should also introduce the reader to the latest developments in curricula and methods in the special education field. Because of its activity focus, the book should also serve as a reference for practitioners in the field. The study questions should be useful for both introductory and advanced students. Overall, it is hoped that the book will serve as a force in its own right—to promote and maximize integration for students with handicaps.

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A PROBLEM-SOLVING APPROACH TO SOCIAL SKILLS TRAINING IN EMPLOYMENT SETTINGS WITH MENTALLY RETARDED YOUTH

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The present study examined two approaches to teaching social behaviors to 3 developmentally disabled youths in work contexts. In one approach, a problem-solving procedure was learned and transferred to different materials. Conversational probes monitored interactions between disabled employees and their co-workers and customers. A multiple baseline design demonstrated that the training produced generalization and maintenance of the targeted social behaviors to the work settings. A second approach based on a role-playing intervention produced no substantial generalization in the work setting. A social validation questionnaire administered to co-workers supported the efficacy of the problem-solving training procedure. The efficacy of social problem-solving training was discussed in terms of sufficient exemplars, common stimuli, and self-mediations.

DESCRIPTORS: social skills training, problem solving, supported employment

Skillful social behavior has been identified as an important factor in performing and maintaining a competitive job (Chadsey-Rusch, 1986; Greenspan & Shoultz, 1981; Rusch, Schutz, & Agran, 1982). Although there have been some surveys (Rusch et al., 1982), observational studies (Chadsey-Rusch & Gonzalez, 1988), and anecdotes suggesting the importance of social behavior in the workplace, most social skills training research with disabled persons has been conducted in sheltered workshop settings (e.g., Agran, Salzberg, & Stowitschek, 1987). However, competitive or supported employment sites confront persons with an environment in which there is likely to be greater opportunity and demand for skillful social behavior. With the onset of the supported employment movement (Rusch, 1986; Wehman, 1981), there needs to be social skills research keyed to nonsheltered work settings, where the majority of developmentally disabled persons will be employed in the future (Will, 1984).

Of the few social skills training studies in such settings, a small number have assessed or achieved generalization across settings or maintenance of treatment effects (for a review, see Chadsey-Rusch & Rusch, 1988). For example, Breen, Haring, Pitts-Conway, and Gaylord-Ross (1985) successfully taught autistic youths to converse with their nondisabled co-workers. Training and probes were conducted in the same setting. Thus, there was evidence of generalization across people, but not across settings. The Breen et al. and other studies have used the typical "component" form of social skills training (Trower, 1984). That is, a specific number of behaviors are rehearsed through role-playing between the client and an instructor or the client and a confederate. The role-playing is usually supplemented with instruction, modeling, and feedback. Some evidence suggests (Rusch & Menchetti, 1981) that this approach may help to develop a social repertoire but only under conditions highly similar to those during role-play training. That is, the desired social responses may not be emitted when the disabled worker is confronted with a slightly different setting or problem than was present in the role-playing situation.

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A problem-solving method (D'Zurilla & Goldfried, 1971) may offer an alternative way to promote the generalization of social skills. For example, McFall (1982) and Trower (1984) have proposed a "process" approach to social skills training that relies on the person's understanding and acting upon the rules of a social situation. The present investigation adapted McFall's model into four steps for the training process: decoding, decision, performance, and evaluation. Participants first interpret or decode the meaning of a social situation. Next, they describe possible alternative ways and select one of these choices to cope successfully with the social situation. After emitting the behavior, they evaluate their performance.

It is possible that the problem-solving, rule-based, and contextual nature of process training may lead to superior generalization. That is, learning more general rules of social conduct may promote transfer from setting to setting, in spite of the disparate and distracting stimuli across employment contexts. The present study attempted to evaluate the efficacy of a process training package in producing such effects.

METHOD

Participants

Three students with mental retardation were working in nonsheltered employment settings at the time of the study. They displayed some deficits in their social behaviors and expressed willingness to improve their social behaviors.

Geoff. Geoff was 18 years old. His primary handicapping condition was mental retardation. His WISC IQ was 58. On the AAMD Adaptive Behavior Scale (ABS) (norms for people with moderate mental retardation; Lambert, 1981), Geoff consistently performed at the 99th percentile on all subscales of Part 1, except on socialization (69th percentile). In the Wide Range Achievement Test (WRAT), his reading comprehension was at the second-grade level, and his math score was at the third-grade level. Geoff lived at home with his parents. He was one of several high school graduates enrolled in a transitional vocational program. Geoff was working as a dish washer/bus boy in a restaurant located in a large department store. His job was to wash dishes and clean up tables in the restaurant. His work performance was considered good by his supervisors and co-workers. However, he had some difficulties communicating with his co-workers and/or supervisors. He had a tendency to mumble when he spoke to people. Also, he did not seek help when he needed it, which caused delays in his work. He was generally aloof and did not talk to co-workers or to customers during break or while working.

Tricia. Tricia was 16 years old. Her WISC IQ was 65. She performed in the 94th percentile in Part 1 of the ABS. On the WRAT her reading was between the third- and fourth-grade level. Her math score was at the third-grade level. Tricia lived at home with her parents. Her job at a beauty college was to sort and group hair perm curlers by color. Her other duties included arranging chemicals in alphabetical order and cleaning up the laboratory. During her break, she wandered around without initiating a conversation and displayed a peculiar hand mannerism. When she didn't wander around, she sat alone in a chair in the rear. If someone initiated a conversation, she would respond with one or two words, but she would not expand the conversation. Instead, she would repeat over and over what she had said previously. This repetition discouraged people from having a conversation with her.

Clara. Clara was 18 years old. She had cerebral palsy. She performed in the 76th percentile in Part 1 of the ABS. Informal testing indicated she could not read at all. However, her receptive and expressive language was at a reasonably high level. Her WISC IQ was 45. She lived at home with her parents. She worked at the same beauty college as Tricia and her tasks were to clean showcases, tables, chairs, and the lobby area. Thus, she had many opportunities to meet co-workers or customers. However, she would not engage in any social interaction unless someone initiated it. During her break, Clara did not interact with other co-workers. Most of the time she sat alone or with Tricia, saying nothing. If someone started a conversation with her, she would respond and converse with that person. She easily got off a topic. This seemed to make people lose interest in carrying on further conversations with her.

Training Settings

All social skills training sessions were conducted in rooms separate from the work setting. Training for Geoff took place in an office (1 m by 2 m) adjacent to the restaurant; it contained a desk and office supplies. Social skills training for Tricia and Clara took place in a break room (1 m by 2 m) adjacent to the work setting. The break room contained chairs and a wooden board.

Materials

A Panasonic micro tape recorder (2 cm by 6 cm by 10 cm) was placed in the participant's pocket to record generalization data while the participant was working or taking a break. During the training sessions, 10 illustrations (pictures, 20 cm by 30 cm) were presented to the participant depicting problem situations that called for an appropriate social behavior corresponding to the target behavior.

Target Behaviors, Measurement, and Reliability

Three problem behaviors for each participant were identified from suggestions by co-workers and supervisors and observations by the first author. Thus, reducing mumbling, increasing social initiations, and conversational expansions were selected for Geoff; initiations, expansions, and conversational terminations were selected for Tricia and Clara.

Mumbling was defined as any utterance that the transcriber could not understand from the tape. Initiation was any statement that began a conversation, changed a topic, or provided an instruction to take some action. Expansion was a statement or question that served to continue a conversation (i.e., led to a verbal response from another person). Termination was a statement that appropriately ended a conversational exchange (e.g., "Good bye").

The first 30 min of each tape were transcribed by two graduate students in education. Transcribers wrote the exact statements the participants and others made (Haring, Roger, Lee, Breen, & Gaylord-Ross, 1986). These utterances were then coded into the behavioral categories. Training was provided to the transcribers using 10-min sample tapes until agreement reached 80%.

Primary observations of each participant occurred in the work setting. Specifically, data for Geoff were taken in the restaurant during lunch hours (12:00 to 12:30 p.m.). Geoff was usually engaged in dishwashing and stacking plates and glasses in a cabinet behind a counter where three or four co-workers were taking orders from customers. He also cleaned up tables in the area where customers were having their lunch.

Data for Tricia and Clara were collected in the work setting during break. Workers did not usually take their breaks in the break room. Rather, they walked around or chatted with other co-workers in the work area. The work area included couches, tables, and the sort of sinks that are usually seen in a beauty salon. All the workers took their breaks at the same time; therefore, there were sufficient occasions for the participants to interact with other co-workers and customers.

Reliability. Reliability was calculated as point-by-point (behavior occurrence) percentages of agreement (Kazdin, 1982) by dividing the number of agreements by the number of agreements plus the number of disagreements and multiplying by 100. Reliability checks on training data were performed for 30% of the sessions (across all phases). The mean percentage of agreement was 97% (range, 94% to 100%) for Geoff, 96% (90% to 100%) for Tricia, and 91% (88% to 100%) for Clara.

Reliability of transcription was checked on 20% of tapes (across all phases) by having two scorers produce transcriptions of the same tape. Transcriptions made by each recorder were compared on a point-by-point (utterance-by-utterance) basis. The mean level of agreement was 78% (range, 64% to 86%) for Geoff, 75% (64% to 86%) for Tricia, and 82% (74% to 92%) for Clara. Reliability for coding was performed on 60% of the sessions. Two different coders assigned codes as initiation, expansion, mumbling, or termination for each utterance of the participant. The mean level of agreement was 94% (range, 86% to 99%) for Geoff, 95% (85% to 92%) for Tricia, and 88% (78% to 95%) for Clara.

Social Validation Data

Co-workers and supervisors were asked to complete six items regarding the participant's social behavior and their attitude toward the participant prior to and after training. The items were scored according to a 7-point Likert scale. The questionnaire was intended to assess the co-workers' general social perception of the participants. The co-workers were not aware of what stage of training the student was in.

Experimental Procedures

Baseline. Audiocassettes were placed in the student's shirt pocket. The first time this was done the student was told that the audiocassettes would record their conversations. The student then went about his or her work or break. No other instructions were given. The trainer or other research staff were never present in the probe setting.

Role-playing training. In this condition, training sessions were conducted in which the instructor presented an illustration representing a situation calling for an appropriate social behavior and asked what a person was supposed to do. For example, "a worker comes to get some perm solution in the lab when you (Tricia) are working there. What are you supposed to do or say when you see the person?" Tricia was expected to say, "I will greet the person either by saying 'hi' or with a smile." If the participant gave a correct response, the instructor provided verbal praise and emphasized the rationale for why it was important to perform a certain behavior. Then the instructor and participant role-played that behavior (e.g., greeting). Thus, there was a repeated exchange of behaviors between the participant and the instructor.

The instructor gave positive feedback for correct role-playing responses. If the participant did not give a correct response, the correct response was explained along with the rationale for such a response. Modeling of the behavior by the instructor followed. Then the instructor and the participant role-played the correct behavior with the instructor taking a co-worker role. Five role-playing situations were provided in which the participant gave correct or incorrect responses. No training on the problem-solving process for generating an appropriate behavior was given in the training session. The training sessions lasted about 30 min, with about 10 trials per session.

Problem-solving training. During this condition the training procedures followed an adaptation of McFall's (1982) model to include decoding, decision, performance, and evaluation. The intervention procedure consisted of three parts in each session: pretest, training, and posttest. The procedure may be illustrated using the example of greeting customers. During the pretest the instructor presented a picture showing the participant passing by a familiar customer in the restaurant. The instructor asked the participant how he would behave in that situation (e.g., "How do you decide what to do when you see a familiar customer?"). The participant was expected to make use of the seven corresponding rules to explain the process or steps to follow in deciding what to do. The instructor recorded the participant's use of the seven corresponding rules.

In the next part of the session, training on the rules missed by the participant was provided. The instructor described the rules that the participant failed to use on the pretest and then conducted several trials with different pictures representing similar situations. For the example of customer greeting, the participant was expected to start with the first rule ("what's happening"; decoding skill, Rule 1) to determine an appropriate behavior in that situation. If he did not give a correct interpretation, a correct answer was provided. Once the participant interpreted the situation correctly, he was expected to describe the choices that were available to him in that situation (decision skill, Rule 2). If he was not able to generate alternative responses, the instructor provided some alternatives. At most, three alternative responses were generated (e.g., ignoring the customer, saying "hi," or waving). After he knew these alternatives, he was expected to test each alternative ("what might happen if"; Rule 3). If he failed to test the choices, the possible consequences of choosing the various choices was discussed by the instructor. Then the participant was expected to choose the most appropriate behaviors in that situation ("which is better"; decision skill, Rule 4). If he did not select the best possible appropriate behavior, the instructor explained why a particular choice was the best one in that situation. After he picked the most appropriate choice, he was then expected to select (Rule 5) and emit (Rule 6) the behavioral responses (e.g., eye contact, gesture, saying "hi"). For the last step, the participant was expected to evaluate his feeling about his performance and how people reacted to his behavior (evaluation skill, Rule 7). For example, the instructor asked the participant to state whether or not he felt good about saying "hi" to the customer and asked him to interpret others' reactions to his greeting (e.g., did they, in turn, greet you by saying "hi" or did they ignore your greeting?).

After training each day a posttest was given. The instructor presented the same picture as in the pretest (e.g., greeting a familiar customer) and asked the participant how he would decide what to do in the situation. The instructor gave no feedback to the participant's response. The percentage of correct responses out of the total corresponding rules was coded as data for the posttest. The average of pre- and posttest scores was used as the dependent variable for training data on the process skill for that session. Each training session lasted about 30 min.

Transfer to nontraining materials. During training of the third behavior, on every other session a transfer probe (stimulus and response generalization probe) was made. That is, at the end of the training session the instructor presented two new social situations (with cards) that required social behaviors different from those taught in training. A total of 10 new social situations (six in training and four in follow-up phase) were presented for each participant. For example, the new social situation included the target behaviors of being patient when waiting in a line, offering help, responding to criticism positively, and so on. Participants had to state what they would do in that situation, using the seven corresponding rules. Participants did not receive feedback from the instructor.

Follow-up. Follow-up probe sessions were conducted in the same manner as baseline and generalization probes. They were introduced intermittently at varying intervals subsequent to the completion of training.

Research Design

A multiple baseline design across response classes (Hersen & Barlow, 1976) was employed for each participant. For Geoff, a combined (B and C) behavioral role-playing (B) plus problem-solving (C) treatment was sequentially introduced across the three behaviors. With Tricia and Clara, the treatment components were introduced separately across the behaviors. Thus, baseline (A) was followed by B, and then by B and C.

RESULTS

Geoff successfully generalized the learned problem-solving steps for expansion to the new materials at a median level of 100%. Tricia increased the use of problem-solving steps to nontrained behaviors. However, the number of steps used (M = 40%) was consistently lower for the nontrained behaviors than for the trained behaviors (M = 70%). Clara did not successfully use the problem-solving skills for nontrained behaviors with the new cards.

Inspection of Geoff's data (Figure 1) shows that training the problem-solving skills resulted in a positive change in social behavior during generalization sessions (i.e., probes in the actual work site). When training was introduced, Geoff began to decrease mumbling, reaching almost a zero level at the end of the phase. His frequency of initiations also showed an increase after the intervention was introduced.

Figure 2 shows that Tricia's initiation, expansion, and termination were extremely low or close to zero during baseline. When role-play training was introduced, the frequency of initiations, expansions, and terminations remained near zero. However, as soon as the process intervention was introduced, initiations and expansions increased

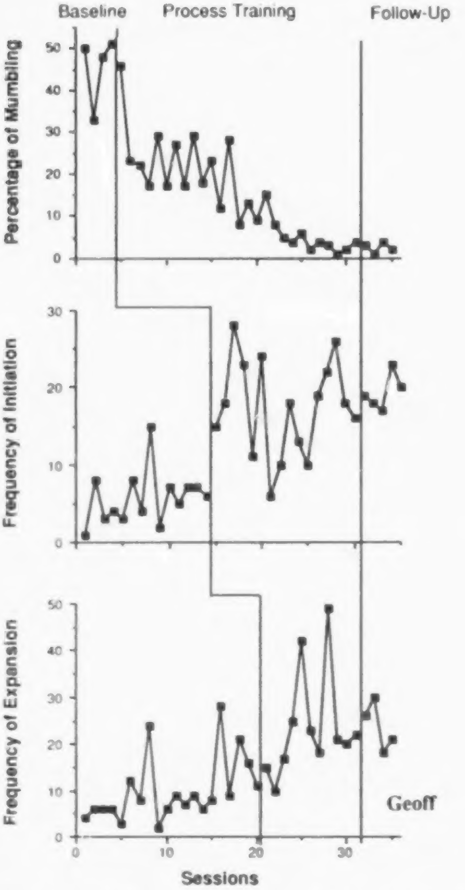

Figure 1. The generalization of social behaviors for Geoff.

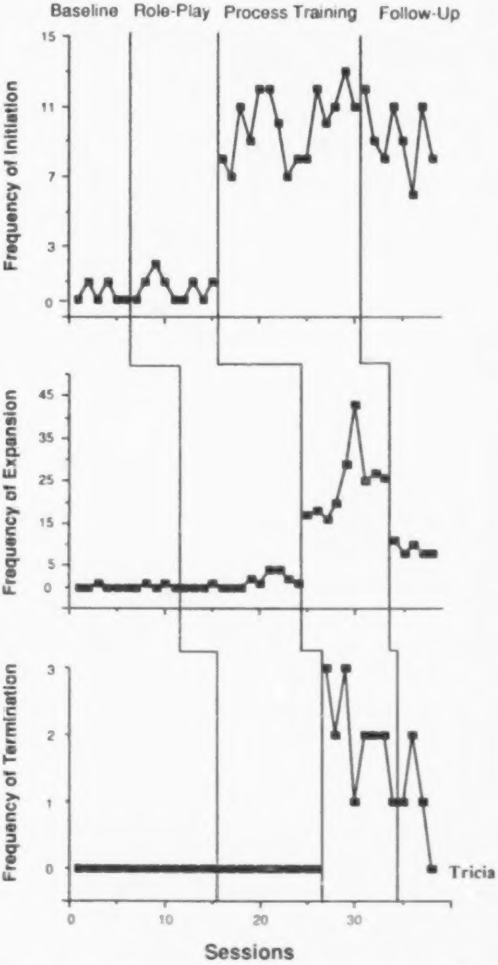

Figure 2. The generalization of social behaviors for Tricia.

sharply. The number of terminations was not as high, yet it showed a definite increase during the process intervention. All three behaviors were maintained at a similar or slightly lower level than the previous phase.

Figure 3 indicates that Clara's generalization data showed a similar trend. During baseline Clara seldom exhibited any of the targeted behaviors. When role-play training was introduced, the three behaviors showed no or a negligible increase. When problem-solving training was introduced, her initiation and expansion rapidly increased, showing a constant upward trend until the end of the intervention. Termination increased slightly. At follow-up, initiation and termination were maintained at about the same level, and expansion dropped slightly.

Social Validation: Co-Worker/Supervisor Questionnaire

Seven co-workers for Geoff, six for Tricia, and five for Clara completed the pretest and posttest social validity questionnaire. With a separate item analysis, all items improved significantly (Matched-pair Wilcoxon Test, $p < .05$) for Geoff (communication, desire of others to have lunch together, physical appearance, acceptance, and inclusion in

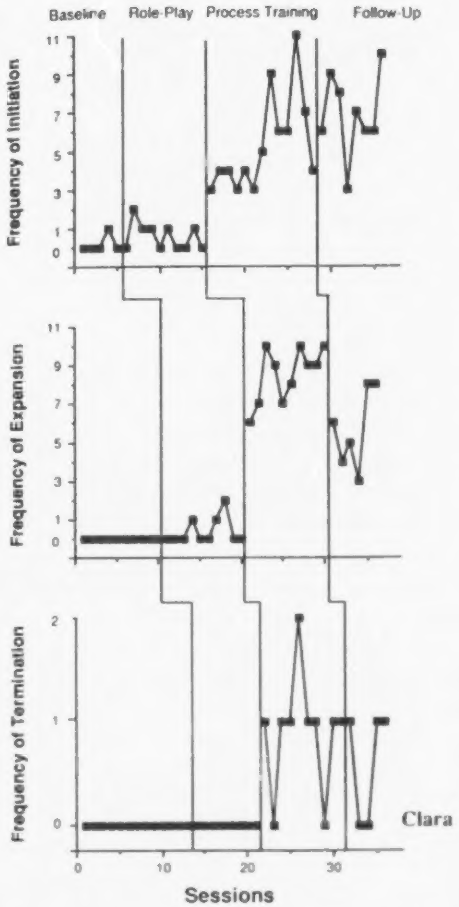

Figure 3. The generalization of social behaviors for Clara.

social get-togethers). For Tricia, all items except physical appearance had significant pre–post differences. With Clara, all items were significant except inviting to social functions.

DISCUSSION

For the 3 participants, problem-solving training led to substantial generalization and maintenance of social behaviors in natural work settings. The on-site conversational probes, as well as co-worker social validation, build a convincing case for the efficacy of this training. A question remains as to why training based upon role-playing training failed to generalize because the participants did emit error-free responding during training in five of the six targeted behaviors. It may be possible, though, that even more training (overlearning) would have induced generalization (Haring, 1978). Also, there was only one instructor (confederate) conducting training. It is quite possible that multiple instructors (peers, exemplars) with more stimulus properties in common (Sacks & Gaylord-Ross, in press; Stokes & Baer, 1977) with the co-workers would have induced generalized responding (Brady et al., 1984). However, problem-solving training had only one instructor with an equivalent amount of practice given as role-playing training and did produce the desirable effects. Whatever the source of the difference may be, it appears that the rule-governed approach involved in process training is promising.

However, for persons with developmental disabilities, it is not clear just how far they may advance in the problem-solving behaviors of social decoding, generating alternatives, foreseeing consequences, and decision making. Certainly, advances have been made in their use of external self-mediators (Sowers, Verdi, Bourbeau, & Sheehan, 1985). It is hoped that applied behavioral intervention research in employment and other settings will encourage the development of such social problem-solving skills.

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Peer-Mediated and Teacher-Directed Social Skills Training for Visually Impaired Students

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The training of social skills in visually impaired children is critical to their adjustment in school and the community. The study compared the effectiveness of two types of training packages, peer-mediated and teacher-directed, in elevating the appearance of a variety of social behaviors. Students were assigned at random to one of the two treatment groups or a control group (N = 15). The six social behaviors were separately trained in a multiple baseline format. Visual inspection and statistical analysis generally indicated that the peer-mediated group produced significant acquisition, generalization, and maintenance of the social behaviors. While the teacher-directed group displayed the highest acquisition scores, it failed to show substantive generalization or maintenance. The control group, in general, showed no changes in any of the phases of learning. A number of social validity measures, peer questionnaire, teacher observation, and social competence, indicated significant pre- to posttraining changes for the two treatment groups, but not the control group. The superiority of the peer-mediated group was interpreted in terms of the "method of common stimuli," or the presence of nondisabled peers in both the training and natural environments.

Although visually impaired children have been mainstreamed into regular educational placements for over 50 years, there is recent concern regarding their social competence and their ability to interact effectively with peers. The effect of blindness or visual impairment in children limits their ability to acquire a repertoire of social behaviors that allows for the development of autonomy and independence. Such has been the case for visually impaired children in mainstreamed and self-contained settings, alike. Research has indicated that visually impaired individuals are socially isolated (Eagelstein, 1975; Hoben & Lindstrom, 1979; Van Hasselt, 1983a), tend to interact with peers whose

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social skills are deficient (Centers & Centers, 1963) and that their physical appearance and social physique limit successful interaction with non-disabled persons (Bates, Morrow, Panscafer & Sedlak, 1985; Dixon, 1972; Kleck, 1968). Yet, the trend within educational service delivery for visually impaired students continues to stress academic functioning in regular classroom settings with little attention given to learning skills that foster social competence in school and community life. Thus, there appears to be a need to train social skills in school-related settings.

A moderate number of attempts have been made to increase the social skills of visually impaired individuals (see Van Hasselt, 1983b, for a review). For example, Sanders and Goldberg (1977) used performance feedback and positive reinforcement to increase eye contact in two multihandicapped/visually impaired males. Although initial training data were positive, there was no apparent generalization of acquired skills to nontraining environments. Yarnall (1979) and Farkas, Sherick, Matson, & Loebig (1981) used differential reinforcement to induce prosocial behavior in a 6½ year-old deaf-blind female and a 12½ year-old visually impaired girl, respectively. Yarnall also tried to promote generalization to extra-classroom activities by teaching reinforcement procedures to teacher aides. While teachers reported substantial improvements in eye contact outside the classroom, no other responses generalized to other settings. Petersen, Austin, and Lang (1979) used prompts and reinforcements to increase the frequency of social behavior in three severely handicapped/visually impaired adolescent girls. Training took place in the classroom and involved prompting by the classroom teacher to engage the participants in prosocial interactions with peers. The procedure led to an increase in peer-directed social behaviors. Follow-up data immediately after the training showed some generalization to other settings.

In an attempt to structure and refine the training strategies used with visually impaired children and adolescents, Van Hasselt, Hersen, Kazdin, Simon, & Mastanuono (1983) developed a role-play test to assess the relevant social behaviors exhibited by these youngsters in typical social encounters. Using the 39 item role-play test as a vehicle to assess and to train four visually impaired adolescent females, Van Hasselt et al. (1983) demonstrated marked improvement in eye contact, body posture, hostile tone, request for new behavior, and overall social competence. However, follow-up data indicated some decline in social performance for all four participants, which led to the use of booster sessions to bring the skills back to immediate posttraining levels.

More recently, Sisson, Van Hasselt, Hersen, and Strain (1985) initiated a social skills training strategy with multihandicapped, visually impaired children. They implemented social skills training procedures that used a peer-mediated approach (e.g., Hendrickson, Strain, Trembly, & Shores, 1982). Sisson et al. (1985) demonstrated increases in social initiations and appropriate play behavior among the visually impaired participants. Nonhandicapped peers received instruction that enabled them to prompt and reinforce visually impaired social interactions among the children. Substantial gains resulted from the peer-mediated intervention, with moderate generalization displayed to other settings and children at a three-month follow-up probe.

Given the potential impact of social skills training with visually handicapped students, the intent of this study was to further examine a critical component of this training. In past experiments, both peers and teachers were used to enhance social interaction. In the typical peer-mediated study, a teacher taught a nonhandicapped peer a number of ways to facilitate social interactions with a handicapped peer. The initial training, though, took place between the teacher and the peer. The peer was then expected to use these skills with the handicapped students in a free play setting. In contrast, teacher-directed training has an adult instructor teach a handicapped student a number of social behaviors. After the student has learned one or more behaviors from the teacher, he is expected to use them in a free play or probe setting.

A question then arises as to whether a teacher-directed or a peer-mediated procedure is superior in teaching social skills? Teachers are trained in educational methodology and usually have years of experience in instructing handicapped pupils. Therefore, it might be predicted that the teacher-directed procedure would be superior in teaching the acquisition of social skills. On the other hand, the free play generalization setting, where training is expected to transfer, is primarily composed of nonhandicapped peers. Therefore, peer led training would have common stimulus properties with the peers in the generalization setting. Thus, the peer-mediated procedure might be expected to produce superior generalization effects. The present study attempted to test these predictions.

METHOD

Participants

Visually handicapped students. Fifteen elementary-aged students (7-12 year olds) were selected to participate in the study. They were selected from four different schools in three school districts in a large metropolitan area. All of the students were diagnosed legally blind as documented by medical reports. Each of the participants was congenitally visually handicapped. All of the students were educated in a resource room program by a credentialed teacher of students with visual handicaps. They were mainstreamed into a regular classroom environment for at least 30% of the school day. Each child was of average intelligence as measured by a standard IQ test. Students were selected for the study if vision was the primary impairment. Students who had received prior social skills training were excluded from the study. Students with social needs were referred by their special education teacher. Table 1 presents a description of the visually handicapped participants by treatment groups. No statistical differences (Two-Sample Wilcoxon Test) were apparent between the groups for level of academic performance.

Non-handicapped peers. A total of five, same-aged classmates of the visually handicapped students were assigned to the peer-mediated approach. The students were recommended by their classroom teachers and/or volunteered after an in-class presentation describing the purpose of the investigation. Each nonhandicapped peer was selected from the mainstream class in which the visually handicapped student attended. If more than one student per class was nomi-

TABLE 1
DESCRIPTION OF VISUALLY HANDICAPPED PARTICIPANTS BY GROUP ASSIGNMENT

Group	Name (age/grade)	Academic dev. according to teacher report	Nature of visual impairment	Visual acuity	Reading mode	% Main stre	Initial social behavior
Peer-Mediated	Beth (8.2/3rd)	on grade level	Glaucoma	NLP(OU)	Braille	90%	quiet, shy
	Eric (8.3/3rd)	on grade level	Optic Nerve Trauma	LP(OU)	Braille	80%	overly verbal, ego-centered
	Charles (9.6/4th)	one year below grade level	Glaucoma	20/400(L) NLP(R)	Print/Braille	60%	passive, shy
	Anne (11.7/6th)	on grade level	Optic Nerve Tumors	20/400(OU)	Print	80%	resists peers, adult directed
	Laura (7.6/2nd)	6 months below grade level	Albinism	20/400(OU)	Print	60%	aggressive, hostile tone
Teacher-Directed	Jason (12.2/6th)	one year below grade level	Optic Nerve Hypoplesia	20/400(OU)	Print	30%	shy, immature, friendly to adults
	Robert (7.2/2nd)	one year below grade level	Retinopathy of Prematurity	20/800(OU)	Print	50%	quiet, shy
	Geof (8.0/3rd)	on grade level	Albinism	20/200(OU)	Print	95%	assertive, has many friends

	Phil (8.6/3rd)	on grade level	Optic Atrophy	NLP(L) 20/200(R)	Braille	60%	overly verbal
	Henry (11.2/5th)	one year below grade level	Cancer of the Eye	NLP(OU)	Braille	90%	aggressive, frequently fights
Control	Diana (11.10/6th)	one year below grade level	Retinopathy of Prematurity	NLP(OU)	Braille	30%	passive, shy
	Tom (11.6/4th)	two years below grade level	Optic Nerve Coloboma	20/800(L) NLP(R)	Print/Braille	50%	covertly aggressive, socially integrated, has group of friends
	Michelle (11.0/4th)	two years below grade level	High Fever Malnutrition	NLP(OU)	Braille	75%	quiet, shy has some friends
	Mark (12.2/5th)	one year below grade level	Micropthalmus	NLP(L) 20/400(R)	Print	100%	aggressive, fights
	Lisa (7.11/2nd)	on grade level	Optic Nerve Tumors	20/200(OU) fluctuates	Braille	30%	quiet, has friends

NLP - No Light Perception.
LP - Light Perception.
OU - Both Eyes.

nated, their teacher would pick the most qualified pupil. The nonhandicapped peers chosen were performing on or above grade level on academic tasks. They demonstrated positive attitudes toward disabled and nondisabled classmates, as indicated by teacher reports. The visually handicapped students and their nonhandicapped counterparts were paired according to gender.

Setting

Training sites. The two training programs were conducted in either the visually handicapped resource room or on the school playground at the public school sites. A section of the resource room was partitioned during training sessions. The resource rooms were similar in their physical arrangement. The room had access to a computer system for visually impaired persons, educational games and materials, instructional aids (braillers, magnification systems, braille and large print texts), and free-time areas.

Probe sites. Observational data were collected in a number of natural settings within the school environment: on the playground during recess, in the cafeteria during lunch, and in the resource room during free time activities.

Measurement

Behavioral measures. Five graduate students in special education were trained to code a number of behaviors in the training or probe settings. Ten-minute observations were randomly selected from one of the probe settings each day. Baseline sessions were held on five consecutive days. Post-baseline probes were conducted three times per week. The first ten minutes of each training session were recorded. A recorder was designated to record only the probe or training sessions of a particular student. Probe recorders were aware of the treatment status of the student, but not of which specific behaviors were undergoing training.

Recorders stood approximately 10 feet from the visually impaired student throughout the 10-minute session. The behavioral categories were either scored in frequency of events (and duration) or in a Likert-scale summary score for the whole session. It was felt that rating scales would provide accurate measures while permitting the simultaneous event recording of other measures in a reliable fashion.

Using the assessment data provided by Van Hasselt, Hersen, Kazdin, Simon, and Mastanuono (1982), and the initial feedback provided by each resource room teacher regarding the overall social competence of each visually handicapped student, the following behaviors were targeted for training:

Direction of Gaze: Appropriate gaze was scored when the student's head was up and positioned on a horizontal plane and turned in the direction of the peer's face during an interaction. The direction of gaze was event recorded into frequency (number of occurrences per session) and duration. Duration was cumulatively recorded with a stop watch. The mean duration score (per session) was calculated by dividing the total duration session score by the number of gaze events.

Body Posture: Body posture was defined as a student's ability to stand or sit in an erect and natural position with head forward and up. Body posture was measured qualitatively on a seven point Likert scale (1 = poor, 4 = fair, 7 = good) at the end of the session.

Positive Social Initiations: Positive social initiations were defined as the visually handicapped student's ability to start age-appropriate verbal or nonverbal interactions with sighted age-mates across school settings. The initiation usually included some greeting or other approach response. Positive social initiations were measured on a frequency (event recording) basis.

Joining in Group Activities: Joining in group activities was defined as a student's moving into the proximity of an existing group's activity (approaching), asking to participate, and waiting for the group's approval. Each student's behavior was measured in terms of frequency (event recording throughout the session), and qualitatively (at the end of the session) on a seven point Likert scale (1 = poor skills, 4 = fair skills, and 7 = good skills).

Sharing in Group Activities: Sharing in group activities was defined by a student's ability to engage in an activity determined by the group. Sharing involved the ability to follow group rules, to take turns, to exhibit appropriate play behavior, and to adhere to group decisions. Sharing in group activities was measured qualitatively on a seven point Likert scale (1 = poor skills, 4 = fair skills, 7 = good skills) at the end of the session. During training sessions, this behavior was rated for participating in dyadic activities with the teacher or peer.

Reliability. Interobserver reliability measures were performed on one-third of all the observations across phases of the investigation. At least two reliability checks were taken during the initial baseline phase. One reliability measure was taken during each week of training. Reliability was also taken twice during the follow-up probe sessions. Reliability checks were taken by trained graduate assistants, the resource room aide, or the teacher. Each rater independently observed the student's behavior from a 10 foot distance during a 10 minute observational period. Interobserver reliability was measured by using a total reliability index (Gaylord-Ross & Holvoet, 1985). Reliability was calculated for each behavior by dividing the smaller number of events (occurrences, seconds, or qualitative score) recorded from one observer, by the larger number of events recorded by the second observer, and multiplying the quotient by 100.

The percentage agreement for individual sessions for each response was: frequency of gaze (Mean (M) = 88%, Range (R): 50%-100%), duration of gaze (M = 92, R: 65-100), body posture (M = 95, R: 70-100), positive initiations (M = 90, R: 60-100), frequency of joining (M = 96, R: 80-100), quality of joining (M = 94, R: 75-100), and quality of sharing (M = 94, R: 70-100).

Overall social competence. Changes in self-perception and self-concept among the visually handicapped students were evaluated immediately before and after training by the administration of the Perceived Competence Scale for Children (PCSC), (Harter, 1979). The PCSC includes 28 rating scale items. The inventory evaluated four domain areas: cognitive competence, social competence, physical competence, and general self-esteem. Its psychometric reliability and validity have been established by Harter (1982). The teacher orally administered to PCSC to the students.

Social validation. Two forms of social validation were used. The perception of social competence in the targeted students was obtained from teachers and peers.

Peer Questionnaire: Randomly selected nonhandicapped classmates (N = 23) of the visually impaired students were asked to complete a seven item questionnaire on their own. This was done prior to the onset of training and immediately following the completion of the intervention phases. Similarly, the five peer trainers were asked to complete the same questionnaire with regard to their peers. The questionnaire contains seven Likert-scale (seven points) items which ask about the acceptance and liking of the targeted disabled peer.[1]

Teacher Observation Checklist: Each regular education teacher (N = 15) was asked to complete an observation checklist on their mainstreamed visually handicapped student. The teachers were told to observe the student's behavior during an unstructured time within the classroom environment or during a group activity on the playground. The questionnaire asked the teachers to observe interactive behavior and to rate six social behaviors on a seven point Likert scale, e.g., body posture, sharing in group activities.[2] The checklist was completed prior to the onset of training and immediately following the completion of the intervention.

Experimental Groups

Each visually handicapped participant was randomly assigned to one of three treatment conditions.

Control group. Observational data were collected for students assigned to this condition across all phases of the investigation; however, they received no intervention. Each control participant was yoked with (paired with) a participant from another treatment group so that the time (date) when the observations were made, and the frequency of observations obtained were nearly identical. For example, if a control student was yoked with a teacher-directed participant, and the latter student was absent for two days, data would not be collected for the control participant until data collected with the treatment student resumed.

Peer-mediated groups. The visually handicapped students assigned to this condition received a four-week social skills training program (12 sessions) conducted by same-aged nonhandicapped peers. The training took place in the resource room or on the playground (when it was not in use) three times per week, for 40 minute sessions. In addition, the nonhandicapped peers received weekly inservice training from a teacher, the first author, to structure the focus of training.

At the beginning of every week of training, the teacher met with each pair of nonhandicapped peer trainers for a 30 minute inservice training session in the visually handicapped resource room. One student was the permanent trainer in all the sessions, and was described in the Participants section above. A second student was identified as a back-up in case of an absence of the first. In fact, such absences never occurred. The visually handicapped student was not present during these sessions.[3] Since the nonhandicapped students had some prior experience with their visually handicapped classmates, the teacher solicited questions about the visually handicapped student's functioning. For example, some peers were concerned that a blind student might not be able to play a game on the playground or participate in an activity without the use of vision. Other peers thought that if a student read braille he had no vision. Through discussion and clarification, the students gained a more realistic perspective regarding their peer's abilities.

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[1] A copy of the peer questionnaire may be obtained from the authors.

[2] A copy of the teacher observation checklist may be obtained from the authors.

After the peer trainers received their introduction, strategies were provided to help them train the first targeted behavior for their visually handicapped peer. The students were told what behavior would be emphasized during the week's behavioral training sessions. They were asked why such behavior might be important to learn, and given reasons why visually handicapped students might have particular difficulty learning the targeted behaviors. Then the peers were asked to role play their responses to the teacher. After they role-played the behavior, the peers were asked: "how did you feel or what did that behavior tell you?" Also, the peers were asked: "if a sighted friend did ______, what would you do?" The students' responses helped the teacher to develop training protocols for the peer trainers. When the peer trainers had difficulty displaying appropriate responses, the teacher modeled specific responses for students to use during training and in non-training environments.

The behavioral training began when the nonhandicapped peer entered the resource room at a designated time during the school day. The teacher would ask the nonhandicapped peer and the visually handicapped student "what activity have you selected for today?" If the students were unable to select a mutually determined activity within five minutes of the onset of training, the teacher provided suggestions for activities to occur. Such indecision usually occurred only during the first two days of training. The teacher then ceased interacting with the students throughout the training session. She remained in the room at least 10m from the students. Although the peer training procedures were somewhat unstructured and individualized for each visually handicapped participant, the peer trainers consistently used the prompting statements and modeling strategies learned during the inservice sessions. After each training session, the teacher met with the nonhandicapped peer to provide positive feedback and suggestions to strengthen their training.[4]

Teacher directed group. The visually handicapped students assigned to this condition received a structured social skills training program directed by a teacher (the first author). The instruction included: modeling, verbal feedback, and role plays. One session of training took place three times per week for a four week period; thus 12 sessions, like the peer-mediated group. Sessions lasted approximately 40 min.

Initially, the teacher introduced the behavior being trained. She asked the student to define and explain the importance of the behavior in social situations. The teacher provided questions or prompted phrases to help the student understand the need for learning the targeted behavior.

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[3] A complete description of the training protocols may be obtained from the authors.

[4] A complete description of the training activities may be obtained from the authors.

After the introduction, appropriate social responses were modeled by the teacher. If the student had no useful vision, the teacher physically guided the student through the behavior. Then the teacher used role play scenarios to practice the targeted behavior.[a] After each role play trial the teacher provided verbal feedback about their performance. Frequently, during each practice trial, the teacher would intervene by modeling appropriate verbal responses or physically demonstrating an appropriate body position or stance. Additionally, the teacher often provided alternate strategies to help the participant engage in positive social encounters. At least two role play scenes were rehearsed during each training session. At the end of each training session the teacher and the student reviewed the skills acquired during their time together. Similarly, at the beginning of a training session the student was asked to review skills acquired during previous sessions for a targeted social behavior.

Other strategies employed during the teacher-directed social skills training included teaching the students to rehearse typical conversational topics and phrases used by their nonhandicapped peers. Modeling and prompting procedures were used by the teacher to help the visually handicapped students incorporate such language into natural social contexts. The participants were also introduced to a variety of games typically played by their classmates.

Probe conditions. Each visually handicapped student was repeatedly observed in probe settings. The seven behaviors were observed across three treatment conditions. A series of baseline probes (n = 7–15) were taken. After baseline, and concurrent with training, a series of generalization probes (n = 3–12) were completed. Approximately a third of the generalization probes occurred on days when there was no training, about one third occurred on the same day and at least 60 minutes before training, and the remaining third on the same day and at least 60 minutes after training. A follow-up series of probes were taken four weeks after the completion of training. The seven behaviors were measured in the same probe settings for four consecutive days.

Experimental Design

A multiple baseline across behaviors design (Kazdin, 1982) was used to evaluate the changes in social behavior for each of the visually handicapped students. Individual data collected for one student within an experimental group was replicated with four other students. The sequence of targeted behaviors was counterbalanced across participants within each treatment condition. The individual scores were then tabulated within the three experimental groups across the four treatment conditions.

RESULTS

Behavioral Data

Individual data are presented for three of the five children in each of the two treatment groups. Data for these children are representative of the groups.[b]

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[a] A complete description of the role play scenarios may be obtained from the authors.

[b] Copies of all of the individual graphs may be obtained from the authors.

Peer-mediated social skills training. The peer-mediated approach showed consistent and positive effects. Figures 1, 2, and 3 display the graphs of Beth, Eric, and Anna, respectively. On all seven dependent measures there was an increase from baseline to training levels of responding. Concurrently, there was elevated social responding in the generalization probe setting. Subsequently, there was considerable maintenance of the social behaviors upon follow-up. These trends in the data are evident in the aggregated data (Table 2) in terms of the group mean scores. A statistical analysis of the five students using randomization tests (Marascuilo & Busk, 1985) confirmed the visual inspection, i.e., there was a significant difference between baseline and training ($p < .05$) for five of the seven behaviors (not duration of gaze nor body posture). There was a significant difference between baseline and generalization ($p < .01$) for all seven behaviors. There was a significant difference between baseline and follow-up for five of the behaviors at the .01 level; for joining in group activities at the .05 level; and nonsignificance for duration of gaze.

Teacher-directed social skill training. The effects of the teacher-directed intervention are depicted in the graphs of Phil, Henry, and Robert (Figures 4, 5, and 6). In almost all behaviors there was an increase from baseline to training. Yet, there was little or no generalization to the natural setting. Similarly, the level of social responding at follow-up was similar to baseline. This pattern was reflected for the other two students on their individual graphs. The mean scores for the five students appear in Table 2 and also show this pattern of results. The randomization test was applied to the data set of the five students in a fashion identical to that in the peer-mediated group.[7] The statistical results confirmed the visual inspection. There was a significant difference between baseline and training ($p < .01$) for all seven of the behaviors. There was no significant difference between baseline and generalization for any of the behaviors. There was no significant difference between baseline and follow-up for any of the behaviors except body posture ($p < .01$).

Control. No individual graph is presented for control students because there were almost no behavioral changes across conditions. Table 2 presents the mean scores for the five control participants. When the same randomization test (which was used with the above treatment groups) was applied, there were no significant differences, except for the increase ($p < .05$) from baseline to generalization for positive initiations and frequency of joining in group activities. Visual inspection of the individual graphs showed that only two of the five students displayed increases from baseline to generalization on positive initiations (none for frequency of joining in group activities, or any other behaviors). Thus, visual inspection does not lead to the conclusion of a significant difference between the two treatment conditions. Park, Marascuilo, and Gaylord-Ross (1987) have stated that intervention significance should only be drawn in single case data when there is a joint agreement between visual and statistical analyses. Such joint agreement was found in the peer-mediated and teacher-directed conditions above, but was not reached in the control condition.

Social competence. The changes from pretraining to posttraining on the

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[7] The results of the statistical analyses may be obtained from the authors.

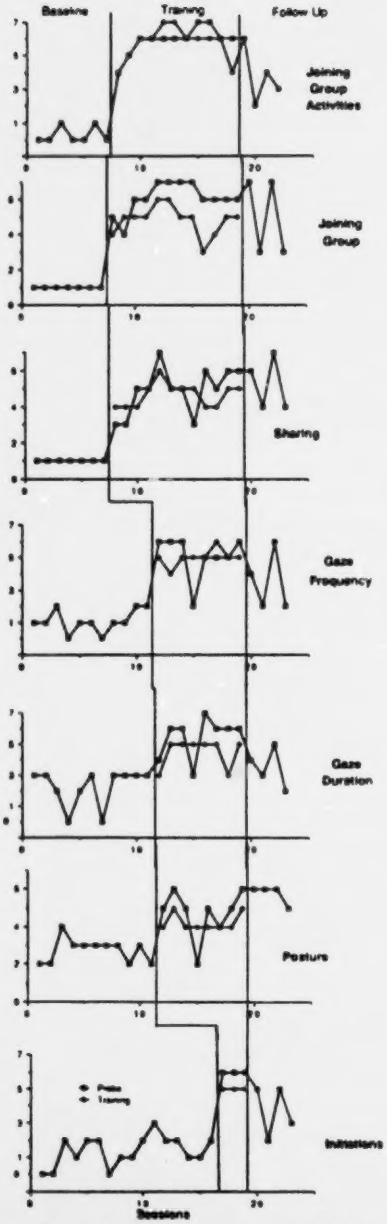

FIG. 1. Peer-mediated skills training with Beth for seven social behaviors across the three treatment phases.

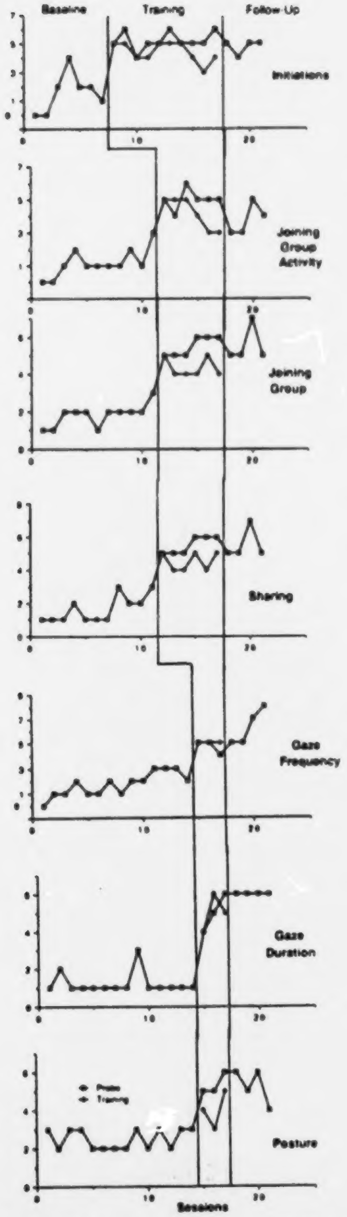

FIG. 2. Peer-mediated skills training with Eric for seven social behaviors across the three treatment phases.

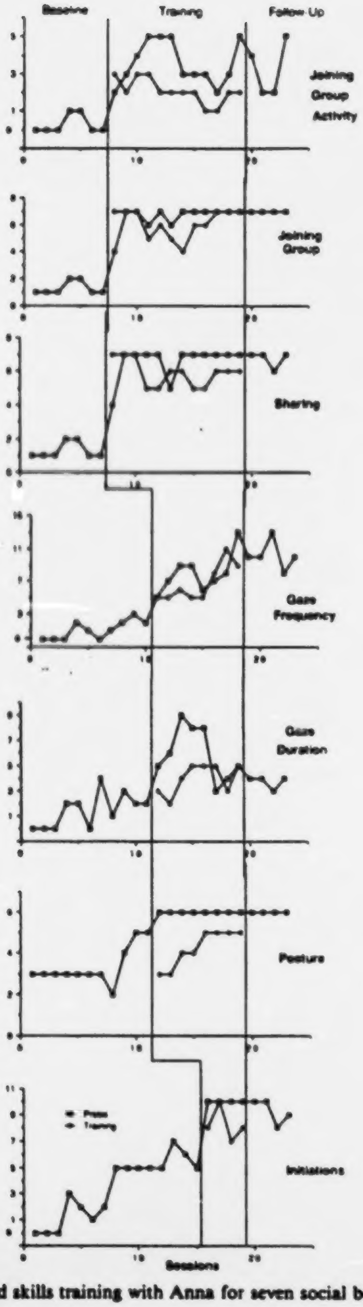

FIG. 3. Peer-mediated skills training with Anna for seven social behaviors across the three treatment phases.

TABLE 2

MEANS FOR THE TARGETED BEHAVIORS ACROSS TRAINING PHASES FOR THE THREE TREATMENT CONDITIONS

	Treatment Conditions											
	Peer Mediated				Teacher-Directed				Control			
Behavior	[1]B	T	G	F	B	T	G	F	B	T	G	F
Duration of Gaze	1.9	3.5	4.5	3.5	2.0	5.5	2.7	2.6	1.7	—[2]	1.4	1.3
Frequency of Gaze	1.9	5.4	7.0	6.4	2.9	7.5	3.4	3.2	3.0	—	2.7	2.4
Body Posture	3.7	5.1	6.1	6.4	3.7	6.0	5.0	5.6	4.8	—	5.5	5.7
Positive Initiations	2.2	5.9	7.3	6.3	2.9	6.9	4.3	3.8	2.6	—	4.8	3.8
Frequency of Joining	.8	3.0	4.3	3.0	1.6	3.9	2.4	2.0	1.3	—	1.7	1.4
Quality of Joining	1.6	4.8	5.6	6.3	2.8	6.1	3.7	4.4	3.2	—	3.8	3.7
Quality of Sharing	1.7	4.6	5.4	5.7	2.5	5.4	3.2	3.8	3.1	—	3.8	3.6

[1] B = Baseline, T = Training, G = Generalization, F = Follow-up

[2] — signifies not applicable

Perceived Competence Scale for Children were evaluated across the three treatment groups. A Two-Sample Wilcoxon Test found the peer-mediated and teacher-directed groups to have significantly larger ($p < .01$) change scores than the control group. In fact, the peer-mediated group improved by 24 points, the teacher-directed group by 16 points, and the control group by 4 points. Although the peer-mediated group displayed the largest change, no significant difference was found between the peer-mediated and the teacher-directed groups.

Social validation nonhandicapped peer questionnaire. The pretraining and posttraining scores on the questionnaire for nonhandicapped peers (N = 28) were statistically analyzed on an item-by-item basis. A Matched-Pair Wilcoxon Test was applied within each treatment group. The control group showed no significant changes on any item from pretest to posttest. Both the peer-mediated and teacher-directed groups showed significant ($p < .05$) increases on two items: "would you choose the visually handicapped student to be your friend?", and if he "was your friend, would some of your other friends want to play with both of you?" The peer-mediated group also improved ($p < .05$) on the item "how much would you like to play" with the visually handicapped child? There were no significant changes by any of the groups on the other four items.

Teacher observation checklist. The pretraining and posttraining item scores on the teacher observation checklist were statistically analyzed for each group. The Matched-Pair Wilcoxon Test found that the peer-mediated group showed significant ($p < .05$) improvement on seven of the eight items, all except "initiations . . . to adult." The teacher-directed group improved only on two items: the "gaze" and "body posture" ones. The control group showed no change on any of the items.

DISCUSSION

The multiple findings demonstrated the effectiveness of social skill training

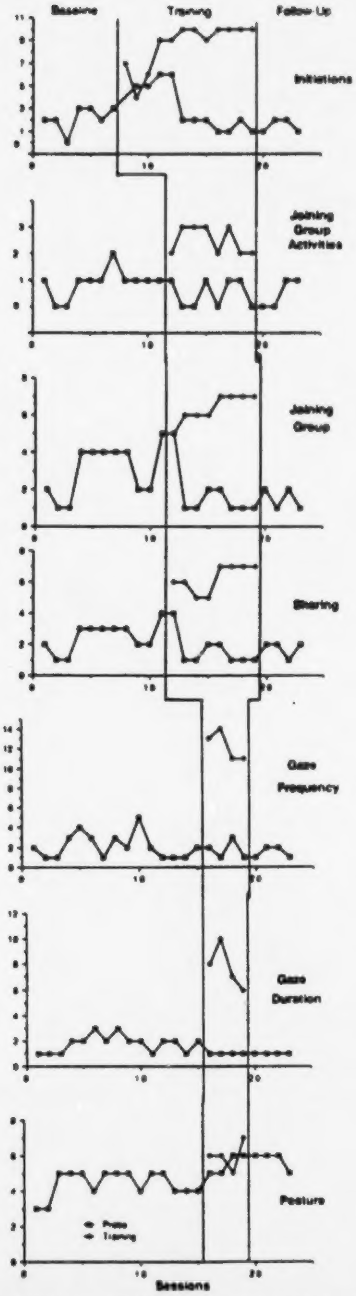

FIG. 4. Teacher-directed training with Phil for seven social behaviors across the three treatment phases.

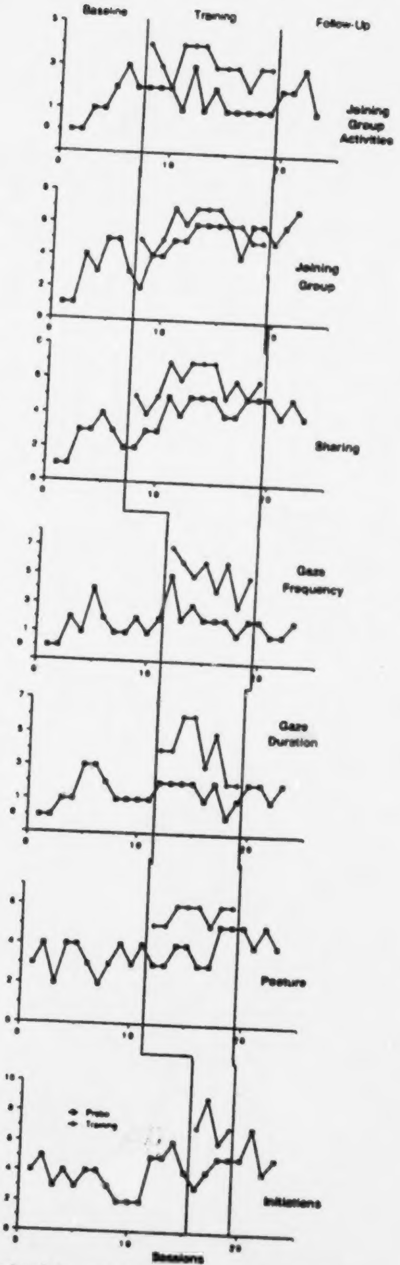

FIG. 5. Teacher-directed training with Henry for seven social behaviors across the three treatment phases.

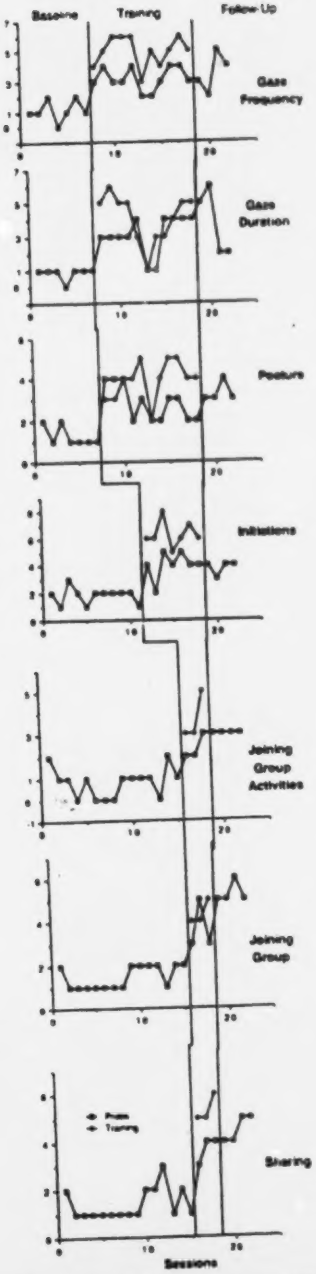

FIG. 6. Teacher-directed training with Robert for seven social behaviors across the three treatment phases.

for elementary-age students with visual impairments in an integrated school setting. Generally, there were improvements in social behaviors, self-perception, peer ratings, and teacher ratings for the two intervention groups, but not for the control group. Upon closer examination, the changes in the peer-mediated group were superior to the teacher-directed group. The peer-mediated group increased their social behaviors as a function of training. Subsequently, they generalized and maintained these behaviors in a natural setting. In contrast, the teacher-directed group acquired the social behaviors in training, but did not generalize or maintain them.

Of particular import, the teacher-directed group produced somewhat larger gains in social behavior during training than the peer-mediated group. That is, a credentialed teacher was somewhat superior in teaching targeted social behaviors than a primary grade peer. It might be suspected that a teacher with years of higher education and classroom experience could teach specific behaviors more effectively than a novice peer. Yet, the lack of generalization by the teacher-directed method versus the peer-mediated method is striking, and worthy of further discussion.

Stokes and Bear (1977) have explained the "method of common stimuli" as one way in which generalization may be promoted. In the present case, the peer properties of the trainer could serve as a common stimulus between training and generalization circumstances. That is, in peer-mediated training a nonhandicapped peer was present during the emission of social behavior by the visually impaired student. During generalization probes, a similar nonhandicapped peer(s) was present. These peers could serve as common stimuli (from the training setting) to evoke similar social responses. In contrast, there was no peer present during teacher-directed training. The teacher did not serve as a common stimulus between training and generalization circumstances.

Building upon the notion of common stimuli, it is possible that the method of building-in natural contingencies of reinforcement into the training setting was also evident (Stokes & Baer, 1977). Just as the peer trainer served as a common discriminative stimulus, (s)he also delivered positive consequences in the training setting. Positive consequences might have been delivered by peers in a similar manner in the generalization setting. In contrast, it is possible that the positive consequences delivered by the teacher in training were different than those given by peers in the natural setting. Certainly, further research could clarify the characteristics of consequent events between teachers and peers in training and generalization settings.

Besides person stimulus differences, there may be stylistic differences in presenting instructional stimuli. In the present case, the teacher-directed method was quite formal in delivering antecedent stimuli, conducting behavioral rehearsal, and providing consequence feedback. Peer-mediated training was structured more informally, so that the nonhandicapped peer would induce a visually impaired student to play games and share materials. The stylistic characteristics of the peer-mediated procedure might have more in common (stimuli) with the natural play encounters of elementary grade students and lead to better generalization than a teacher-directed approach. In either case, such stylistic and person variables need to be further explored to better identify the controlling variables in social skills treatment packages.

Although the behavioral data demonstrated the superiority of the peer-mediated method, the social validity and social competence data were less clear cut. The two treatment groups were statistically equivalent on changes in self-perception and peer ratings. Yet, teachers perceived the peer-mediated group to make many more improvements than the teacher-directed or control groups. Interestingly, the only teacher perceived item on which the peer-mediated group did not show improvement was initiating with adults. Since the visually impaired students did not train with adults, it is logical that they did not improve on this item. As would be expected, the peer-mediated students did improve on the initiation with peer item. Perhaps, because of their previous classroom experiences, the teachers were able to make more accurate discriminations about social behavior change (cf. Strain & Kohler, 1988). In our own anecdotal observations, there appeared to be more ostensible changes in the related and non-targeted behaviors of the peer-mediated participants. These changes among particular individuals included: 1. spending more time seeking peers at lunch and recess; and conversely exhibiting less solitary free time in the resource room; 2. trying out for a school play; 3. being invited by a nonhandicapped peer to their home after school; 4. increasing group activities with higher status, nonhandicapped peers.

Certainly, such observations are anecdotal and in need of systematic verification. Yet, they point to the types of correlated behaviors that were observed only in the peer-mediated group.

The present study points out the effectiveness of social skills training among visually impaired students who have been identified as socially isolated. Their low levels of the targeted social behaviors were evident even though all of the students attended an integrated school program which mainstreamed them into regular education classes. The study thus replicates previous work with other disability groups (e.g., Gaylord-Ross, Haring, Breen, & Pitts-Conway, 1984), with autistic youth, which showed that mere physical integration with minimal social contact did not lead to substantive social interaction. Only when social skills training was delivered, did the rate and type of social interactions between handicapped and nonhandicapped students increase significantly.

Although a case has been made for peer-mediated social skills training, at least one question still remains. We have already discussed the need for a better understanding of the components of peer-mediated training. One possible investigation might contrast the differential effects of the present package with one which uses visually impaired students as trainers. If common person (stimulus) characteristics play a role, then the similar disability attributes of a blind trainer might enhance generalization.

In conclusion, there are many research questions in need of attention in order to make a clearer experimental demonstration of the effectiveness of social skills training with visually impaired persons. Although this population has been increasingly mainstreamed into regular public schools, it has yet to be shown how blind students can have rewarding social interactions and avoid peer isolation in these integrated settings. Social skills training offers a potentially useful role for enhancing the educational integration and the social behavior development of visually impaired students.

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Day 5
Logging procedures
Graphing procedures

Management plays a crucial role in maintaining atmosphere and structure. Establishing procedures and adhering to these procedures produce the desired climate and assist in assuring that the tutoring session remains productive.

Accountability

Integrating an accountability component in a tutoring program permits you to monitor the program's effectiveness and measure its success so needed modifications can be made. Having the tutor log daily activities not only makes the tutor more conscientious, but also provides a good way for supervisors to monitor the types of activities that occur. Measuring tutee progress by charting test scores, quizzes, or homework; compiling results of tutee surveys; and looking at tutor logs are only a few of the measures that may be used. Charting tutee's scores increases interest on the part of the tutee and increases ownership on the part of the tutor. Also, remember the importance of conferencing with both tutors and tutees on an informal basis to get an idea of their perceptions regarding the program.

Independently, these components of atmosphere, structure, and accountability may enhance an existing program; however, they become more powerful when working interdependently. The cohesiveness of these three elements will only be attained and assured as long as the supervisors of the program assume ownership and pledge a commitment to ensure this happens. It is through the constant monitoring of the daily sessions and the frequent evaluations of the program that one can feel comfortable and confident that an effective peer tutoring program will exist, and that students will view it as a worthwhile and beneficial program that definitely meets the needs of these students seeking assistance.

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Transition

Contextually Based Social Skill Training for Learning Disabled Youth

Robert Gaylord-Ross
Karen Green
Shepherd Siegel

Almost all professionals would agree upon the importance of social skills for learning disabled students. Social skills enable them to succeed in school, at home, in the community, and at work. Because of their academic and socioemotional problems, learning disabled children and youth often lack effective social skills. Due to this need, a number of social skills training (SST) programs have been developed, field tested, and evaluated.

There have been two very visible programs for learning disabled and emotionally disturbed students. Arnold Goldstein's skill streaming approach to SST has been widely disseminated. The Kansas ASSET program of Jean Schumaker and Steve Hazel (1983) is probably the most comprehensive and researched package. Both programs have a behavior analytic framework; in that training includes instructions, modeling, rehearsal, coaching, and feedback components. The Kansas program is rigorous in delineating curriculum content, providing instructional materials, evaluating generalized performance, and generating a substantial research base. In fact, the SST program described below was originally influenced by the ASSET program to a considerable degree. Of special importance here, Fawcett, Mathews, and Whang (1985) extended the ASSET program to the job-related domain.

An Ecosocial View of Social Skills Training

The greatest focus in SST programs has been on direct interactions between two or more people. While this emphasis is well conceived, it is important to give a broader emphasis to social development. Gaylord-Ross, Park, Cameto, and Tappe (1989) have defined an ecosocial model of development. It defines four levels of social reality and corresponding interventions. A macro-setting level examines large-scale system variables such as school, residential, and work setting integration or segregation. The second level defines relationship and social network variables, which offer social support and a superior quality of life. The third level deals with direct social interactions between persons. A variety of behavioral social skills training programs (e.g., peer-mediated SST) have been developed for disabled students. A fourth level of social reality is the individual or intraindividual variable. Here, cognitive-behavioral explanations and interventions on social phenomena are addressed. The research of McFall (1982) has been influential in identifying the social processes of decoding, generating alternatives, considering consequences, strategy selection, performance, and evaluation. Park and Gaylord-Ross (1989) have, in fact, shown that such cognitive-behavioral training can improve social skills in employment settings with mildly handicapped youth. In summary, professionals involved wit socialization efforts must take a broad ecosocial view. The majority of such efforts have focused upon the social interaction level. Yet, there is an increasing number of interventions focusing at more micro and macro levels.

The Career Ladder Program

The Career Ladder Program is a longitudinal transition program for learning disabled youth (Siegel, Greener, Prieur, Robert, & Gaylord-Ross, 1989). Students from as early as tenth grade engage in work experiences at a variety of business sites in San Francisco (e.g., California Automobile Association of America, Photo and Sound Corporation, Marriot Corporation, and the University of California Medical Center). As seniors, the students engage in 4 half-days of work experience (per semester). On the fifth day the students participate in a 2-hour career laboratory. A semester-long curriculum unfolds that includes the topics of job retention, job acquisition, social problem solving, and SST. An eclectic philosophy is synthesized in the lab and the program; this philosophy includes the principles of behavior analysis, reeducation (Hobbs, 1978), and social change (Siegel, 1988).

The Career Ladder Program also has an intensive postsecondary component. Over 130 graduates (1 to 5 years out of school) receive an array of vocationally related services by a team of transition specialists. These services include career counseling, job placement, job training and retraining, family involvement, and referral to continuing education. Among the program graduates, 96% are currently working and/or in school.

Social Skills Training in Vocational Contexts

The career laboratory spends about three sessions dealing with social skills training. It draws from the Kansas Asset program in teaching such skills as giving and receiving positive and negative feedback, for example. The primary goal of the SST is to get the students to apply these skills in their work experience setting.

Klement-Heist (1988) conducted an evaluation of the Career Ladder Program's SST. She first evaluated the generalization of three social behaviors for four students from the career laboratory's simulated training to the workplace. The social behaviors were measured with planned probes (Salzberg, 1988), with confederates who included co-workers, visitors, and instructors.

Klement-Heist found that half of the 12 behaviors (from the four students) generalized from career lab SST to the workplace. She then implemented a similar SST program at the worksite. Besides role-plays, the students self-monitored their performance of the social behaviors while working. The study reported that the six behaviors successfully generalized from the workplace SST to the natural probes while working. Klement-Heist attributed this success to the generalization variables (Stokes & Baer, 1978) of sequential programming, common stimuli, sufficient exemplars, and self-mediation.

Summary

There have been many advances in social behavior training in recent years. An ecosocial view argues for the consideration of multiple levels of social reality and their corresponding interventions. With the recent emphasis on school-to-work transition, SST needs to be extended into vocational settings. A career laboratory approach, coordinated with real work experiences, appears to be a viable way to facilitate social development. On-site SST may be a necessary adjunct to simulated training. It is hoped that such social-vocational programs will encourage job retention, friendship development, and a higher quality of work life for learning disabled youth.

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Books in Review

A Book Review of Learning Disabled/ Gifted Children

Mary K. Tallent

Fox, L.H., Brody, L., & Tobin, D. (Eds.) (1983). *Learning disabled/gifted children: Identification and programming.* Austin, TX: PRO-ED.

Leonardo daVinci, Thomas Edison, Albert Einstein, Winston Churchill, and Hans Christian Andersen are but a few examples of eminent individuals who have managed to achieve high levels of success despite their learning disabilities. Their giftedness was determined, however, ex post facto. Had they not been so successful, chances are the discrepancy between their strengths and weaknesses never would have been recognized. To be learning disabled and gifted seems incongruous to some. How can someone who has trouble reading be considered gifted? *Learning Disabled/Gifted Children: Identification and programming* was written to help dispel myths that have contributed to a lack of awareness of the learning disabled/gifted child. The editors also sought to broaden the public's understanding of the characteristics and special needs of these children and to suggest methods of identification and programming.

It may seem unusual to read a review of a book written in 1983. However, there are so few books devoted solely to the subject of learning disabilities in gifted children that this book remains a classic, along with Daniels' *Teaching the Gifted/Learning-Disabled Child.* This review may be helpful to those who are searching for additions to their libraries that will aid them in identifying and serving these often-overlooked children. The editors of this book have managed to pull together ideas from outstanding experts in both gifted education and the field of learning disabilities. Their work is divided into three sections covering a) concepts and characteristics, b) problems and practices, and c) programming. The book concludes with recommendations for future research and practice.

The authors in Part I do an excellent job of making a case for giftedness appearing among the learning disabled. Tannenbaum and Baldwin provide a helpful chart to show differences between high IQ, highly motivated children, and high IQ, learning disabled children. Senf, in chapter two, illustrates how the learning disabled/gifted fare on WISC-R profiles and sets forth the premise that this group requires an examination of their social and emotional functioning. Berk's chapter follows, with a description of definitions of the learning disabled through the 1960s and into the 1980s. This third chapter, though very complete and interesting, does not seem to add to a greater understanding of the population in question. To complete Part I, Rosner and Seymour offer specific examples of characteristics of the learning disabled/gifted child through clinical examples of four case studies. The children's behavior during testing and emotional problems arising from the children's con-

Simulated and In Situ Vocational Social Skills Training for Learning Disabled Youth*

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Abstract

Social skills training (SST) for learning disabled youth in transition from school to work is of substantial importance. Almost no studies have examined the generalization of SST to real employment settings. The present research utilized a multiple baseline design with four learning disabled seniors to investigate such generalization effects. An initial simulated SST package delivered at school led to generalization in 8 of 12 behaviors. Subsequently, in situ training at the work site produced generalization in 4 of 6 behaviors. A two phase model was advanced which argued for initial treatment with simulated SST and subsequent in situ SST for more challenging behaviors. Such manipulation of the natural contingencies of reinforcement in criterion settings appears to be a powerful way to promote generalization for learning disabled youth in transition.

Simulated and In Situ Vocational Social Skills Training for Learning Disabled Youth

Social skills are critical for in-school and out-of-school performance for students with learning disabilities. Fortunately, research and curriculum efforts in social skills training (e.g., Schumaker & Hazel, 1986) have demonstrated an effective instructional technology. Although learning disabled youth have displayed the successful acquisition of social skills through such training procedures, there still is much work to be done in demonstrating their generalization to a number of criterion settings. Work settings have received increasing attention because of the federal transition initiative (P.L. 98-199). Social skills are clearly important for obtaining and maintaining employment. It would therefore be useful to examine extant social skills training methodologies within vocational contexts.

For example, Mathews, Whang, and Fawcett (1982) found that vocational social skills like accepting negative feedback, providing constructive criticism, and explaining a problem to a supervisor were performed at lower levels by learning disabled adolescents than by their non-disabled peers. Subsequently, Whang, Fawcett, and Mathews (1984) taught two learning disabled adolescents six job related social skills. These skills included explaining a problem to a supervisor, accepting a compliment, accepting an instruction, providing constructive criticism, accepting criticism, and providing a compliment. Instruction included written descriptions of each task, examples of appropriate performance (modeling), rationales for task use, rehearsal through role-play, feedback, and study questions. As measured by novel role-play situations in the training setting, the youths demonstrated substantial increases in their skill performance following training.

Another study designed to teach social skills relevant to occupational situations to mildly and moderately handicapped adolescents was conducted by Montague (1988). The 49 students had been identified as either learning disabled, emotionally handicapped, or mildly mentally retarded. The 10 job-related social skills targeted for instruction included: 1) understanding instructions, 2) asking a question, 3) asking for help, 4) accepting criticism, 5) ordering job responsibilities, 6) accepting assistance, 7) giving instructions, 8) offering assistance, 9) apologizing, and 10) convincing others. These skills were taught over a 10 week period according to specifically scripted lessons. The actual teaching procedures included modeling, active participation, verbal rehearsal, directed questioning, visualization, cueing, guided practice, role-playing, feedback, and reinforcement. The training package increased job-related social skills within the training setting. Anecdotal data as well as student, parent, and teacher perception surveys indicated limited but promising transfer of skills from the classroom to the work environment. Montague noted, however, that further investigation would be necessary to accurately measure the student's transfer and maintenance of these skills in the workplace.

Social skills training for learning disabled students have generally reported substantial transfer to novel role-play situations. However, Schumaker and Ellis (1982) have stated, "findings indicated that performance in novel role-play situations do not necessarily reflect how a learning disabled student will generalize newly learned social skills to the natural environment" (p. 413). Therefore, research is needed to demonstrate training strategies which will lead to generalization to natural settings.

For example, Warrenfeltz et al. (1981) found generalization of trained vocational social skills across settings and people. The training program employed both role-play and self-monitoring techniques. However, because the self-monitoring and role-play interventions occurred simultaneously, it was not possible to isolate or assess their separate effects upon generalization. Subsequently, Kelly et al. (1983) isolated these two components by first monitoring the effects of the role-play training alone, and then applying the self-monitoring procedure. The targeted vocational social skill was "appropriately responding to instructions." Following role-play and self-monitoring the students acquired a repertoire of appropriate responses to contrived supervised instructions. Yet, this behavior failed to generalize to their vocational training setting.

Recently, Schumaker, Hazel, Pederson, and Nolan (in press) conducted social skill training plus opportunities for practice of the newly acquired skills within the criterion classroom setting. Once students met criterion in the training and classroom situations it was found that they began to exhibit a generalized use of the skills in other situations and settings throughout the school and with individuals not related to the training. These findings indicate that training which extends beyond the training environment to the natural setting tends to provide for greater generalized use of social skills.

The purpose of the present study was to examine the generalization of job-related social skills to a natural work environment. The training of these skills took place as part of a comprehensive community vocational training program, The Career Ladder Program (Siegel, Greener, Prieur, & Gaylord-Ross, 1989). It was hypothesized that the students would exhibit increased levels of skill generalization to their work sites following initial social skills training in a classroom setting, combined with a self-monitoring component at the job site. It was also hypothesized that given additional social skills training at the job site, the student's levels of skill performance would further increase. This result would provide additional support for the notion that generalization increases when training is extended into the natural environment.

Method

Participants

Four learning disabled students participated in the study. The students were all high school seniors who had been diagnosed by the district school psychologist according to the California state guidelines for learning disabilities. They attended resource classrooms in a large urban school district.

Donna. Donna was an 18-year-old, middle class, Hispanic female student. According to teacher records she had "learning difficulties" and was lagging behind in her age and grade level placements, especially in the areas of auditory and verbal processing. Her WRAT (Wide Range Achievement Test) scores included a reading recognition grade level of 7.1, a spelling level of 7.5, and a math level of 4.6. Her scores on the WISC-R (Wechsler Intelligence Scale for Children-Revised) indicated an "average to slightly below average I.Q."

Jackie. Jackie was an 18-year-old, middle class, female Caucasian student. According to teacher records she lacked self-esteem and confidence and is "behind" in most academic areas; demonstrates poor use of phonics skills, has a limited sight vocabulary, and has problems with visual and auditory memory. Jackie scored at the 5.3 grade level in reading recognition on the WRAT, 4.5 in spelling, and 5.0 in math. She was been labeled "learning disabled with visual motor integration problems." Her scores on the Bender Visual Motor Gestalt test placed her two standard deviations below the age level norm. Her records also indicate a score on the WISC-R of "well below average."

Randy. Randy was a 17-year-old, low income, Black male. According to his teacher records he had been labeled "passive-aggresive," noted to be "quite moody," and unable to deal appropriately with criticism. He had good visual motor and auditory memory skills, yet was weak in the area of mathematics. Randy scored at the 10th grade level in reading recognition on the WRAT, 7.0 in spelling, and 4.0 in math. He was described as having a "low to average cognitive level."

Joan. Joan was a 19-year-old, middle class, Chinese-American female student. Teacher records indicated that Joan had been enrolled in an aphasic program for four years. Her language difficulties included weak auditory processing and a poor use of syntax. Her teachers have noted that she was somewhat socially immature. Her WRAT scores included a reading recognition score of 3.3, a spelling score of 2.0, and a math score of 3.3. Her records also indicated an I.Q. score which places her in "the slow learner category."

Confederates. Confederates were those people who aided in this study by observing and rating behaviors, and/or participating in planned probes. Confederates included: co-workers who held regular jobs in the students' various departments; visitors, who were either graduate students or professors; and teachers from the students' job sites, or other teachers or paraprofessionals from the school district.

Settings

All baseline and posttraining behavioral probes were taken at the job site of the four participating students. The job site was a large California State Automobile Association of America (CSAAA) office complex, which employed 1,800 persons. The students participate in four half-day work experiences at CSAAA.

Each of the four students worked in different departments. Their job tasks were quite varied, ranging from filing to basic computer work.

Positions were considered "entry level-clerical," and the students were expected to maintain professional standards and attitudes at all times. As previously mentioned, once the students began to reach acceptable levels of competence and independence, the onsite instructor gradually faded her supervision, transferring it to the co-worker.

Vocational social skills training took place at a Transition School in a classroom known as the "Employment Skills Lab." The students attended the lab every Friday throughout the semester and received training in the three targeted vocational social skills; each skill was addressed for two consecutive weeks.

Generalization training at the job site took place in the break area of the personnel office at CSAAA, as well as in the students' specific work sites. Discussion and role-play was carried out in the personnel office, while additional role-play (if necessary) and targeted practice took place in the students' actual work areas.

Behavioral Probes

Baseline and generalization probes were conducted in the natural work site. The first author and several trained confederates served to initiate the planned probes and to observe and rate the students' behaviors. Periodically, confederates were used to conduct interrater reliability checks. One to three probes were taken per week, across a two to three month period. Teacher confederates conducted a total of 143 probes (across all students and the three behaviors). Visitor confederates conducted 97 probes across the three behaviors. Co-workers conducted 40 probes for the conversational behavior only.

The three targeted behaviors were assessed via planned probes. The confederate would request that the students either "Tell me your job duties here at CSAA" (Behavior 1), or "Explain to me how to do the task you are working on" (Behavior 3). Variations made by the confederates altered the syntactical form of the question but maintained its meaning, e.g., "So what do you do here at Triple A?" (Behavior 1) or "Could you please show me how to use this copying machine?" (Behavior 3). Behavior 2 (conservational skills) had observers provide an opportunity for conversation via body language, gestures, smiles, etc..., in hopes that the student would initiate a conversation. If the student failed to initiate, the observer was instructed to ask at the most, two "open-ended" questions, again with the intention of evoking the student's conversational skills. Once the interaction was complete, the observer would then leave the area in order to immediately and discreetly complete a behavior rating form for each observed behavior. Interaction probes for any of the three behaviors usually took from 45 to 180 seconds.

Probe Data and Reliability

The three targeted behaviors were each broken down into nine component parts. Each component could either be scored with a yes or no, or by rating the performance on a 7-point rating scale. Table 1 presents an example of a rating sheet. Each dichotomous item received 7 (yes) or 0 (no) points. The rating scale items received one to seven points. Thus, the 9 item scores could range from 0 to 63.

Reliability. Interobserver reliability was assessed during the baseline and generalization phases. The observers were trained to rate component skills on the behavior rating forms in order to serve as reliability observers. Agreement data for Behavior 1 occurred during an average of 36% of the sessions for each participant; for Behavior 2 an average of 8%; and for Behavior 3 an average of 27% of the sessions; throughout all phases.

Reliability coefficients were calculated after obtaining scores from two observers' rating forms. The following perceived agreement formula was applied:

$$\frac{\text{Low Score}}{\text{High Score}} \times 100$$

Interobserver agreement ranged between 71% to 100% with a median of 94%. Table 2 presents the reliability score ranges and medians of each behavior for every student.

Insert Table 2 about here

Vocational Social Skills Training (Phase I - Classroom)

The four participants attended a weekly "Employment Skills Lab" (Siegel et al., 1989) along with 4 to 8 other students. These weekly, 2 1/2 hour meetings throughout the semester were designed to teach specific vocational social skills, in addition to job search, job keeping, and general work behaviors.

The social skills training sessions began with a discussion of the particular skill to be learned. This discussion included a rationale clarifying the benefits of using the skill. Students were asked to reflect on where and when such a skill could be used in their work site. A general definition of the skill highlighting its component parts was also discussed. At this point, student self-rating forms were distributed, skill components were again reviewed in the context of the form, and rating procedures explained.

Discussion was followed by a teacher modeling the social behavior. The first display was flawed intentionally, while the second demonstrated correct usage of the previously discussed steps. Modeling both versions provided a basis for contrast, and allowed the students a chance to clearly note the differences. Students were asked to rate the performances on the self-rating forms. Feedback for the two role-plays followed the format on the rating forms. Students discussed what score they gave and why.

Next, the students themselves were given an opportunity to develop a role-play for a given situation. Whenever possible, sample situations would be derived from the students' actual on-the-job experiences. The students in the audience were instructed to rate the performances using the self-rating forms. Following the role-play, feedback was provided and the students were asked to discuss their own feelings regarding their performances. Role-plays were repeated until the group consensus revealed mastery of the skill. By rotating students, everyone was given an opportunity to practice the skill as well as practice completing self-rating forms. Every student engaged in four role-plays for each of the three behaviors.

The "homework" step of training was addressed by again calling attention to how, when, and where the skill could be used at the job site. In addition, students were instructed to complete self-rating forms at their work site following any occasion when the skill was utilized. These forms were easily accessible; they were located on the desk where the students signed in and out of work.

Vocational Social Skills Training (Phase II - In-Situ)

If a student failed to display a targeted behavior in the probe setting within two weeks after training, s/he participated in Phase II training. The training took place in the main break area of the workplace as well as in the student's own department. Initially, the instructor discussed the skill (its importance and its components) with the student in the main break area (this was basically a review of the "discussion" step of Phase I training). After determining a number of relevant on-the-job situations requiring this skill, the instructor and student would engage in two to four role-plays, each alternating in the lead role. Again, as in Phase I, feedback was provided as well as practice using self-rating forms. Next, the student was helped to pinpoint a situation or co-worker with whom they could practice the particular skill on the same day (homework). This "targeted practice" was followed by discussion as soon afterwards as possible.

Two separate sessions (lasting 10-20 minutes) were conducted within a week at the breakroom. Subsequently, one to three sessions occurred in the student's department if no generalization had occurred after breakroom training.

Social Validity Measure

In order to establish some measure of social validity, a co-worker questionnaire was developed and completed by one or two of the students' co-workers. This questionnaire asked the co-workers to assess certain indicators of the student's vocational social skills. As in the case of the behavioral rating forms, the items on the questionnaire were based on the component behaviors of each of the targeted skills, as well as predetermined employer standards and expectations. The questionnaires were completed once at the beginning of the semester (pretest), and once near the end (posttest). Each item could be responded to with a rating of one to seven. The 12 items resulted in a range of scores from 12 to 84.

Experimental Design

A multiple baseline design across three vocational social skills (behaviors) was used in this study to assess the participants' generalization of skills to a natural work environment. Behaviors were always rated in the natural work setting; initial ratings taking place prior to any specific social skills training (Baseline), then concurrent with classroom social skills training (Phase I), and finally, in certain cases, concurrent with in-situ training (Phase II). Consistent with the multiple baseline design, the training was applied sequentially to the targeted behaviors over a six week period (one behavior every two weeks).

Results

The data presented in Figures 1, 2, 3, and 4 illustrates the results for each of the four students. Overall, each of the four participants showed improvement in performance levels as a result of Phase I (school) training, over baseline levels of performance. Likewise, Phase II (in-situ) training resulted in a general increase over Phase I levels.

Insert Figures 1, 2, 3, and 4 about here

For Randy, training for Behavior 1 resulted in an increase from a baseline median score of 27 to a posttraining median of 51 (Figure 1). However, a few weeks after Phase I training was completed his scores began to drop to near baseline levels. At this point, Phase II training took place at the work site, resulting in scores at levels higher that Phase I.

Training in Behavior 2 resulted in similar increases for Randy. His median scores increased from a baseline score of 26 to a Phase I posttraining scores of 45. The most significant improvement in this behavior can be seen by inspecting Randy's item by item skill scores (see Table 3). Items 2, 4, and 7: "initiate the conversation"; "conversational questions"; and "eye contact" showed distinct improvements. During baseline these component behaviors were either lacking completely or rated at very low levels. Yet following Phase II training these items received scores of 5.5 and above. However item #6, "reinforcing complimentary comments" showed no increase over baseline levels. It should be noted that during posttraining observations there were four occasions when observers noted Randy giving a complimentary comment during a conversation as compared to no occasions during baseline.

Insert Table 3 about here

Scores for Behavior 3 again show improvement over baseline levels, yet not as pronounced as that of the first two behaviors. The item by item scores (Table 3) reveal specific weaknesses in; #2, "explain the purpose of the job," #5, "ask if there are any questions," #6, "use of appropriate terminology," and #8, "eye contact." Each of these items failed to show any significant improvement over baseline levels. However, given Phase II in-situ training, these skills (except for #5) increased considerably over baseline and Phase I levels. Lower scores on #5 was a trend for all of the students.

For Jackie, the introduction of Phase I training for Behavior 1 led to increases in her performance scores over baseline levels (Figure 2). Her median score increased from 30 to 49, with a peak score of 60. In addition, her posttraining performances remained at a consistent level throughout the semester. Table 3 indicates consistent resistance to change for skill #5.

For Behavior 2, Jackie's posttraining scores improved somewhat, her greatest improvement being in the area of "self-disclosing statements." For Behavior 3, Jackie's total scores increase from Baseline. The addition of Phase II training further increased performance, though.

Figure 3 shows that Donna systematically improved her performance from Baseline as a function of Phase I training for all three behaviors. Table 3 indicates that she consistently improved for all skills except #3 and #5.

Figure 4 shows that Joan increased Behavior 1 as a function of Phase I training. The addition of Phase II led to no change from an already high level. Behaviors 2 and 3 displayed no marked changes with the onset of

Phase I. The addition of Phase II led to an increase in Behavior 2 but no marked change in Behavior 3. Table 3 indicates increase in all skills for Behavior 2 with both phases of training. Behavior 3 had inconsistent skill increases from Phase I to II.

In general, the four students improved across the phases of training. Table 4 displays the increasing median scores across the phases for the three behaviors.

Insert Table 4 about here

Table 5 presents the pretest and posttest social validation scores. Overall, the median posttest score improved markedly from pretest. This aggregate change was reflected in the changes of individual students. There was a considerable amount of agreement between co-workers. Donna had the smallest amount of change, but she had a quite high pretest score. In addition, co-workers made a number of anecdotal comments about the students becoming more friendly and conversational by the end of the semester.

Insert Table 5 about here

Discussion

Increasing attention has been given to the training of social skills with learning disabled students. This activity seems particularly important with the vocational preparation of this population. While a few previous studies demonstrated the acquisition of social skills, they were not validated in actual work settings. The present study demonstrated that a behavioral SST procedure can in some cases produce generalization to actual work contexts.

Across the four students, 8 of 12 behaviors improved as a function of simulated training in a school setting. Four of six other behaviors improved with in situ training conducted at the work site. On site training may thus be viewed as a useful adjunct to simulated training. The social validation outcomes further supported the power of the training procedures.

Part of the difficulty and reason for relatively few studies being conducted in work settings is the challenge to the investigator to control conditions and measures. The main purpose of a job site is worker productivity and not employee education. The investigator is more of a guest than a collaborator in this setting. Direct observational measures may be intrusive. The planned probes used here are both economical and nonintrusive. Here, they were able to pinpoint specific skill needs and successes. For example, asking if one's answer is complete or if there were any questions proved particularly resistant to training efforts.

Different work areas also produce varying social climates, which may be more or less conducive to conversational or other social exchanges. Such variation in social climates contributes extraneous, uncontrollable variables from which a training package must transcend. In fact, the training procedures utilized here proved to be efficacious across such environmental variation. This was particularly noticeable as social behaviors appeared across a range of interactions and were perceived to change by different co-workers. In addition, since the SST took relatively little time and space, it could be implemented in such real world circumstances.

Still, a number a questions remain about the the characteristics of vocational SST. For one, the role-play (rehearsal) component of SST was merged with the self-monitoring component. It is possible that one or the other component, alone, could have induced substantial changes. For example, Storey and Gaylord-Ross (1987) found self-monitoring alone could maintain the original social changes produced by a combined rehearsal/self-monitoring package.

More importantly, there needs to be more research systematically comparing the relative contributions of simulated vs. in-situ training. The present findings argue for the need for an in-situ adjunct. Still, perhaps more simulated training sessions beyond the relatively few conducted here might have led to substantial generalization. Yet, Kazdin (1989) recently reported that rather lengthy rehearsal/self-monitoring training was insufficient to produce generalization to criterion settings. We would argue that in-situ training should be explored with more challenging behaviors or students (as was the case with Kazdin's antisocial children). Such training applies the Stokes and Baer (1978) strategy of manipulating the natural contingencies of reinforcement to promote generalization.

In an enlightening review Horner (Horner, McDonnell, & Bellamy,1986) reported that simulated (vs. community-based) training can produce generalization effects for persons with mild handicaps. More specifically, different individuals and settings call for differing admixtures of simulated and in-situ training. Simulated training offers the benefit of convenience and economy. In-situ training may be required with more intractable cases. Future research needs to investigate the optimal combinations of these training approaches for learning disabled students who transition from school to work.

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Table 1.
Rating Form for Ordering Job Duties.

Name of Student: ______________________________

Name of Rater: ______________________________ Date: ________ Time:

Type of Assessment: _____ Baseline _____ Training
_____ Generalization _____ Follow-up

Length of interaction: _____ minutes

		Yes	*No*
1.	Face the Person	_____	_____
2.	Wait for the question	_____	_____
3.	Tell them your job title	_____	_____
4.	List a few of the things you do. (clearly state 3 or more job tasks)	_____	_____
5.	Ask if your answer is complete	_____	_____
6.	Use "I" statements when describing duties. (as opposed to "you")	_____	_____

7. Use appropriate terminology (professional terms in relation to department, no slang).

1---------2---------3---------4---------5---------6---------7
Inappropriate Appropriate

8. Eye contact [approximate ratio of eye contact to total time student was actively conversing (in percent)].

1---------2---------3---------4---------5---------6---------7
No Eye Contact Continuous Eye Contact

9. Speech loudness

1---------2---------3---------4---------5---------6---------7
Extremely Soft Spoken/Inaudible Appropriate Loudness

Table 2.
Reliability of Observation Measure.

	Behavior	# of Probes	Range	Median
Randy	Ordering Job Duties	5	78-98%	95%
	Conversational Skills	3	95-100%	97%
	Giving Instructions	5	81-88%	87%
Jackie	Ordering Job Duties	9	84-100%	96%
	Conversational Skills	4	84-98%	90%
	Giving Instructions	5	80-98%	86%
Donna	Ordering Job Duties	5	96-100%	98%
	Conversational Skills	2	96-100%	98%
	Giving Instructions	4	71-98%	89%
Joan	Ordering Job Duties	6	72-100%	98%
	Conversational Skills	4	94-97%	96%
	Giving Instructions	6	71-93%	89%
Summary:	Ordering Job Duties	25	72-100%	97%
	Conversational Skills	13	84-100%	97%
	Giving Instructions	20	71-98%	88%
Totals:		58	71-100%	94%

Table 3.
Median Scores for the Nine Behavioral Skills Comprising Each of the Three Behaviors.

Behavior 1	Joan			Randy			Jackie			Donna		
(Ordering Job Duties)	BL	PI	PII	BL	PI	PII	BL	PI	PII	BL	PI	PII
Skills												
1. Face Person	7	7	7	3	4	7	7	7	NA	6	7	NA
2. Wait for Question	7	7	7	7	7	7	7	7		7	7	
3. Tell Job Title	0	5	7	0	4	7	0	3		0	2	
4. List Things Do	1	5	7	0	5	7	0	7		1	7	
5. Ask if Complete Answer	0	5	4	0	2	7	0	1		0	1	
6. Use "I" Statement	0	6	7	0	6	7	0	7		0	6	
7. Appropriate Terminology	3	5	7	2	6	6	2	6		3	6	
8. Eye Contact	4	6	6	2	5	6	2	6		3	6	
9. Speech Loudness	3	6	6	6	6	7	6	6		5	6	
Behavior 2 (Conversation)												
Skills												
1. Face Person	7	7	7	5	6	NA	6	7	NA	7	7	NA
2. Initiate Conversation	1	1	7	0	4		1	3		0	4	
3. Return Greeting	7	7	7	7	7		6	7		7	7	
4. Question	0	4	4	0	4		0	0		0	4	
5. Statements	2	4	4	1	4		2	7		2	6	
6. Complimentary Comments	0	0	2	0	0		0	0		0	4	
7. Affect	4	6	6	4	6		5	6		5	7	
8. Eye Contact	4	6	6	2	6		4	6		4	6	
9. Speech Loudness	4	5	7	4	7		5	6		4	7	
Behavior 3 (Giving Instructions)												
Skills												
1. Label Job Task	1	3	1	2	5	7	2	0	4	2	4	NA
2. Explain Job Purpose	1	2	3	2	5	4	2	4	5	2	5	
3. Show Materials	4	4	7	5	5	7	5	7	7	4	7	
4. Give Instructions	1	4	6	3	5	7	1	5	7	2	7	
5. Ask if Questions	0	1	3	0	2	2	0	0	7	1	3	
6. Clarity and Slow Delivery	4	4	5	4	5	6	4	6	6	4	6	
7. Appropriate Terminology	3	4	3	4	4	6	3	5	5	4	5	
8. Eye Contact	5	6	6	2	4	6	4	7	6	5	6	
9. Speech Loudness	5	5	6	6	7	7	4	6	6	6	6	

Table 4.
Median Scores for Targeted Behaviors Across the Three Training Phases for the Four Students.

Behavior	Baseline	Phase I	Phase II
Ordering Job Duties (1)	30	50	59
Conversation (2)	30	45	51
Giving Instructions (3)	28	44	52

Table 5.
Social Validity Score.

Student	Pretest Co-worker A	Pretest Co-worker B	Pretest Median	Posttest Co-worker A	Posttest Co-worker B	Posttest Median
Randy	54	60	57		73	73
Jackie	49	47	48	66	63	65
Donna	70		70	78		78
Joan	45	53	49	64	67	66
Total (Median)			49			69

Figure Captions

Figure 1. Levels of social behaviors across the training phases for Randy. Points indicate different types of confederates.

Figure 2. Levels of social behaviors across the training phases for Jackie.

Figure 3. Levels of social behaviors across Phase I training for Donna.

Figure 4. Levels of social behaviors across phases of training for Joan.

Figure 1

Randy

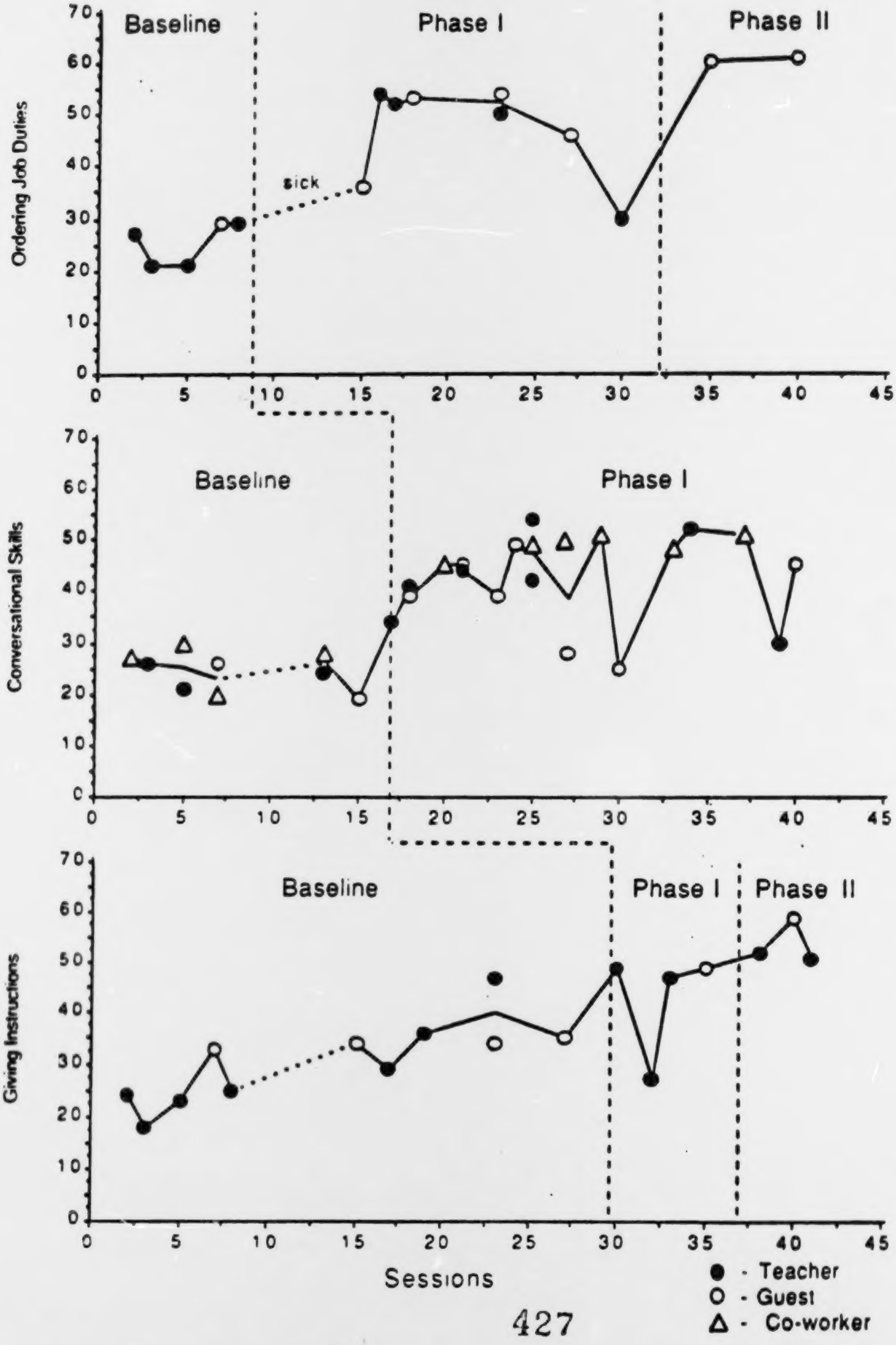


Figure 2
Jackie

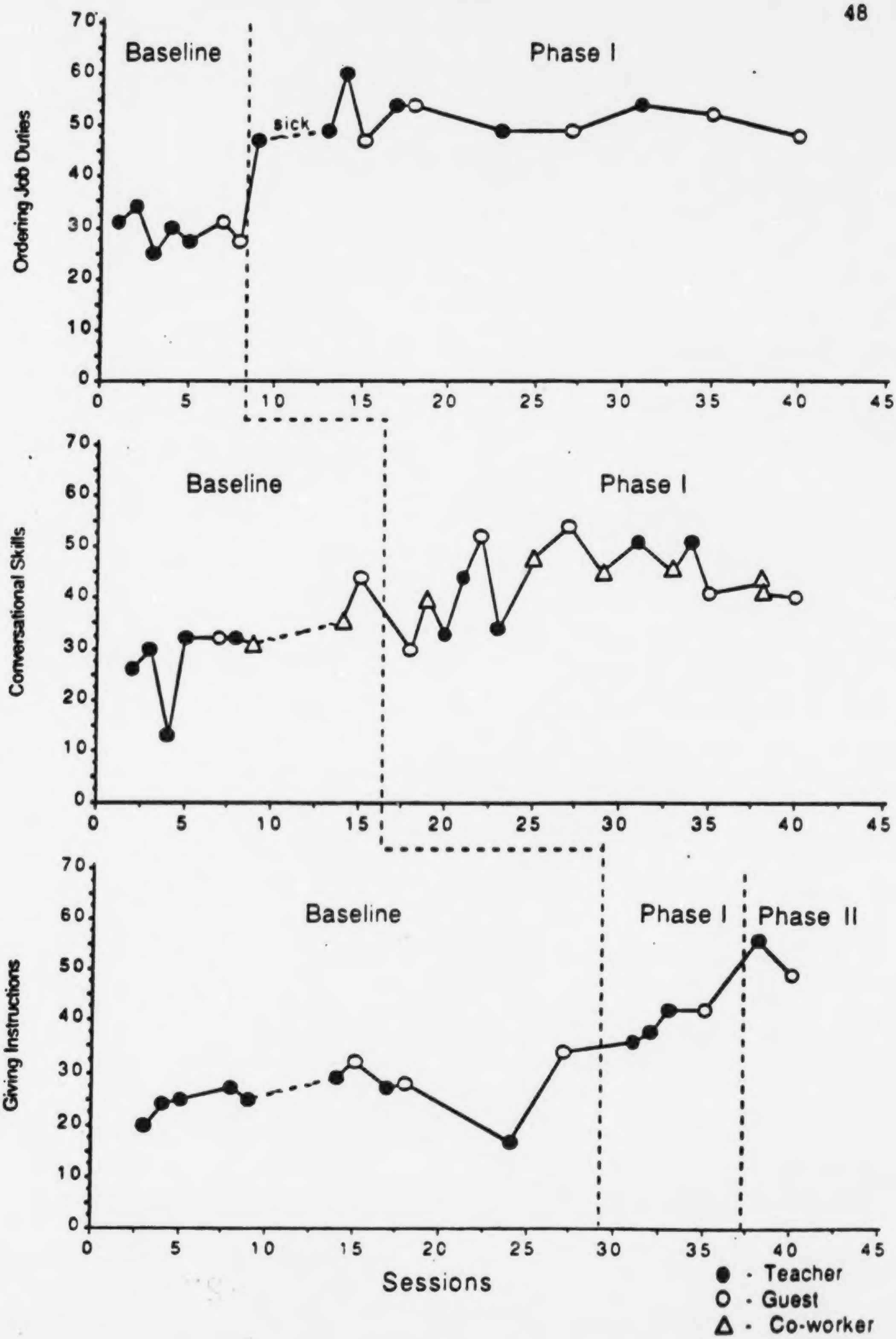


Figure 3
Donna

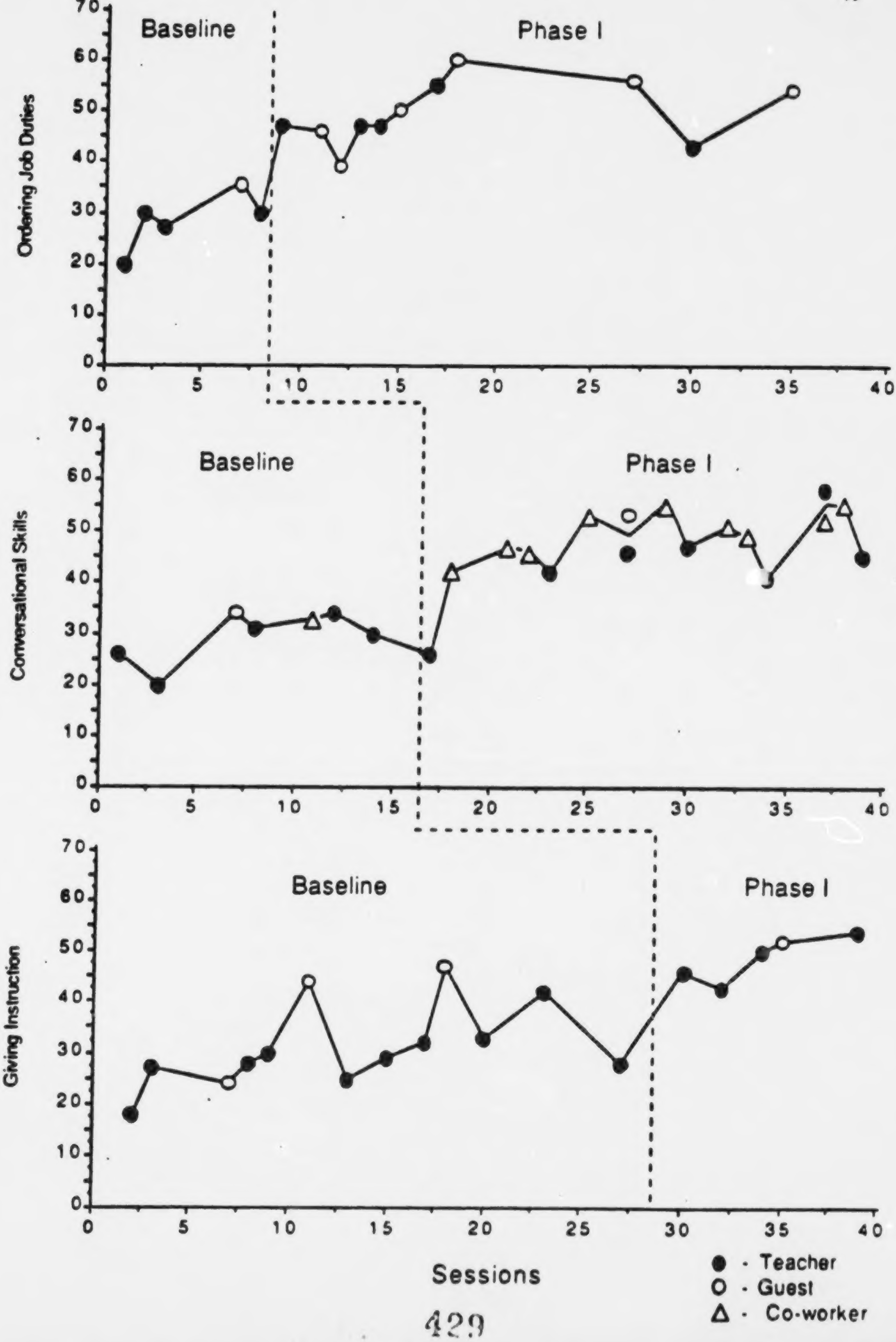
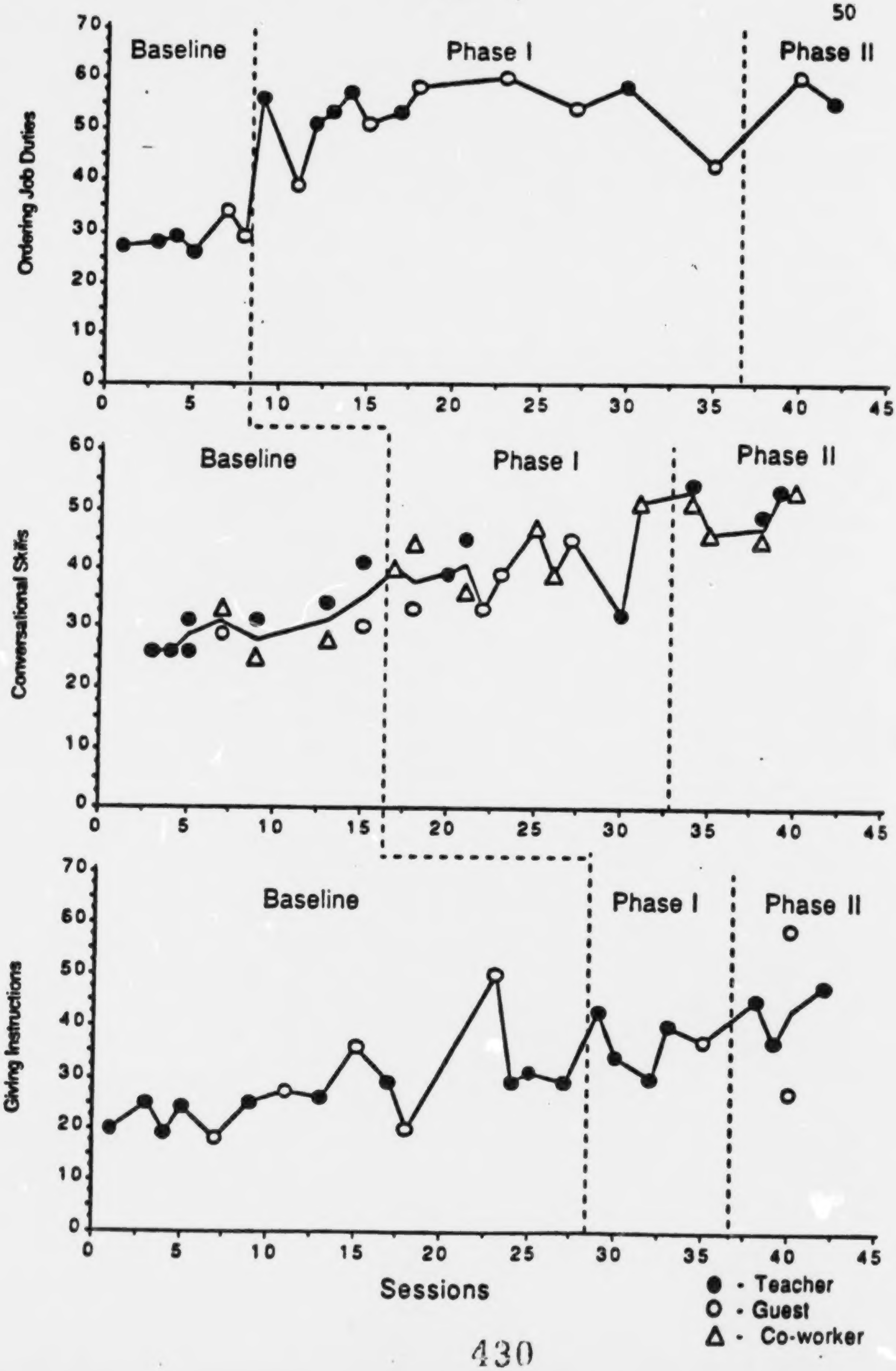


Figure 4

Joan



Social skills training with handicapped adults:
A reformulation of a construct

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of Ph.D. requirements in Special Education

Running head: Social Skills Training

Abstract

The imperative for a reformulation of social skills training theory for handicapped adults is discussed. Two models of social competence are examined leading to the synthesis of a six-systems model guided by a social cognitive theory approach to social interaction. A process approach based on this six-systems approach to social skills training is suggested along with specific implications for social skills training with handicapped adults.

As an illustration of this six-systems model, a process approach to social skills training is presented as a pilot study. A cognitive-behavioral group therapy approach was used to train a selected social skill to three mildly and moderately mentally retarded adults. A multiple baseline design across behaviors was used to evaluate the effectiveness of such an intervention. Three clients were trained to effectively solicit information from an employer using a process approach along with combination of self-management strategies. All three clients were mentally retarded students enrolled in a local community college program specializing in vocational and living skills training for mentally retarded adults. All participants exhibited both qualitatively and quantitatively different social skills at the conclusion of training. The findings lend support to the conceptual model of social competence and social skills training presented and suggest new avenues for research and development.

Social skills training with handicapped adults:
A reformulation of a construct

Historically, mental retardation has been defined in terms of subnormal intellectual functioning and generalized social skill deficiencies (American Association on Mental Deficiency, 1977). Social skills training for mentally retarded adults has received increased attention from researchers and practitioners over the last several years (Abordo & Vreeland, 1987; Castles & Glass, 1986; Chin-Perez, Park, Sacks, & Gaylord-Ross, 1986; Davies & Rogers, 1985; Foxx, McMorrow, Bittle, & Ness, 1986). Professionals are increasingly seeing the relevance of this type of training in the preparation of handicapped individuals for employment and independent living (Breen, Haring, Pitts-Conway, & Gaylord-Ross, 1985; Castles & Glass, 1986; Chin-Perez, Park, Sacks, & Gaylord-Ross, 1986; Doll, 1953; Halpern, 1985; Storey & Gaylord-Ross, 1987), and have found that appropriate social skills are instrumental for acquiring and maintaining employment (Cheney & Foss, 1984; Greenspan & Shoultz, 1981). The importance of behavioral skills in fostering appropriate and meaningful social support and relationships has also been investigated (Nietupski, Hamre-Nietupski, Green, Varnum-Teeter, Twedt, LePera, Scebold, & Hanrahan, 1986; Stainback & Stainback, 1987; Storey & Gaylord-Ross, 1987; Siegel, Park, Gumpel, Ford, Tappe, & Gaylord-Ross, in press).

The recent past has witnessed a conceptual move from an operant and molecular framework (e.g., Storey & Gaylord-Ross, 1987) to a more cognitive-behavioral approach (Bandura, 1986; Gambrill, 1985; Trower, 1984). In short, social skills training (SST) has moved conceptually to a process approach (Gambrill, 1985; McFall, 1982; Trower, 1984), which views the individual as the primary catalyst for his or her own behavioral change through his or her own cognitive processing of external stimuli. Social skills training with handicapped persons has yet to reflect this recent shift in SST (e.g., Storey & Gaylord-Ross, 1987; Nietupski et al., 1986) and remains committed to the operant-based molecular remediation of skill deficits. As an example of an operant based social skills program for severely handicapped youth, Storey and Gaylord-Ross (1987) trained autistic youths to initiate and elaborate social interactions with three different leisure objects (chewing gum, a video game, and a radio). The researchers then conducted an extensive task analysis of the social behaviors required for a successful social exchange with a non-handicapped peer using each of the three leisure objects. The three severely handicapped youths were trained to perform each stage in the task analysis. Storey and Gaylord-Ross (1987) note in their study, however, that the three clients failed to adequately maintain these newly trained behaviors.

In this paper an alternative to operant notions of social skills training which capitalize on reinforcement and step by step instruction of the behavior sequence observed (i.e. Storey and Gaylord-Ross, 1987) will be discussed through the presentation and examination of a six-systems conceptual model of social competence. This approach to SST will be based on a process approach to social skills. An argument will be presented for the inclusion of self-management training to facilitate the acquisition, maintenance and generalization of social skills. A detailed description of a pilot research study based on this approach with mildly and moderately mentally retarded adults will follow.

TOWARD A MODEL OF SOCIAL COMPETENCE

Social skills are learned behaviors which are used in an interpersonal exchange to obtain or maintain reinforcement from one's environment (Kelly, 1982). When discussing social skills, one must remember that SST is derived from a behaviorally oriented approach; social skills are socially specific behavioral skills and can be modified (Kelly, 1982; Trower, Bryant, & Argyle, 1978).

The use of the term *socially skillful* implies a judgement regarding the efficacy of an individual's overt behaviors in a specific situation. Statements about an individual's skill level do not refer to the individual's personality; but rather to overt and observable behaviors. Suggesting that a person is socially skillful implies that in a particular situation a behavior was executed in such a manner that it maximized the potential for receiving possible reinforcements from the environment. Additionally, it implies that if the same situation were to recur and were to be judged using the same criteria, the behavior would most likely again be judged as skillful (McFall, 1982).

Meichenbaum and his colleagues (Meichenbaum, Butler & Gruson, 1981) propose a cognitive conceptualization of social competence. They describe three components of social competence: (a) overt behaviors, (b) cognitive processes, and (c) cognitive structures. As an example Meichenbaum et al. (1981) describe a party. An individual's actions and behaviors (i.e., social skills) in a party will reflect each of these three components. Overt behaviors refer to the specific observable behaviors which the individual engages in during the party. Cognitive process are thoughts and styles of information processing with which the individual analyzes and interprets the social situation (i.e., internal dialogue, expectancies and appraisals, and role-taking skills). These operations include the individual's internal dialogue about the party, the expectancies which the person brings to the party and the quantity and quality of prior information which the person possesses about the situation. The individual's cognitive structures refer to the person's motivational or "affective structures" (Meichenbaum et al., 1981) that underlie cognitive processes or overt behavior. A gathering such as a party will mean different things to different people; to some it will be an opportunity to "go wild", to others it will be a chance to meet a member of the opposite sex.

"The meaning that individuals attach to general social settings ... as well as to specific social interactions within those settings, we see as part of a broader network of concerns or goals that determines what are important issues in the individual's life and the position he or she takes in relation to them. These concerns may vary in intensity (how important or central they are) and in valence (positive or negative). An individual will normally have a multiplicity of concerns, some of which support and others that compete with one another, in situations that the individual encounters." (Meichenbaum et al., 1981, p. 52)

To clarify, if we consider overt behaviors and cognitive processes as the "what" and the "how" of the social interaction, we may consider the individual's cognitive structures as the "why" of those behaviors (i.e., affective and motivational reactions to environmental stimuli). In other words, overt behaviors are observable actions. They may be judged as either appropriate or inappropriate in a given social situation. Cognitive processes, on the other hand, are those process which aid the individual in determining which behaviors to perform and subsequently how to perform them. Cognitive structures influence why an individual will react to a given situation as he does. Cognitive structures differ from the applied behavior analytical concept of the discriminative stimulus (S^D); the understanding of reinforcements systems does not adequately explain the constructs of self-efficacy (Bandura, 1977) or self-presentational anxiety (Schlenker & Leary, 1982).

An individual's behavior and cognitive structures are the results of learning. Life experiences which specifically cause diminished feelings of self-efficacy, and intensified feelings of social anxiety will often influence an individual's social skills (Leary, 1983). Schlenker and Leary (Leary, 1983; Schlenker & Leary, 1982) have attempted to describe social anxiety through an understanding of self-presentational anxiety. They write that real or perceived deficits in an individual's self-presentational skills will contribute towards inappropriate or ineffective social skills. Social anxiety is a cognitive and affective response characterized by apprehension about an impending, potentially negative outcome that one thinks one is unable to prevent and which results from the prospect or presence of personal evaluation in real or imagined social situations (Schlenker & Leary, 1982). Self-presentation is the attempt to control images of the self before real or imagined audiences and is a goal directed act designed to generate particular images of the self, thus influencing how audiences perceive and treat the individual (Schlenker & Leary, 1982).

According to McFall (1982) the production of a social skill is regulated by the interplay of three different factors: a person's previous life history, his stimulus processing abilities and the task itself. The interplay of these three components dictate the quality of the response in a specific situation. Processing abilities include decoding skills (the processes by which incoming stimuli are received, perceived and interpreted); decision skills (the ability to generate appropriate and adequate response alternatives, to test each response and to choose the most appropriate response); and encoding skills (the processes by which a response choice is executed and monitored by the individual). It is assumed that only observable behaviors appear after these three processing levels are completed (behaviors which are then which are judged by others as "skillful" or "unskillful").

McFall (1982) analyzed the components of social behavior, specifically of the cognitive processes assumed to be involved in skillful behavior (encoding, decoding and execution skills). Meichenbaum et al. (1981) presented a different cognitive approach to understanding social competence. This approach differs to that of McFall (1982) in its attempt to account more fully for motivational and affective responses to external stimuli. Both these theoretical models (i.e., McFall and Meichenbaum et al.) fail to adequately take into account an individual's personal ecology (Hobbs, 1982); personal ecology refers to the array of environmental reinforcements and punishments which surround us all.

The ability to create and maintain positive and reinforcing social environments may be a key indicator of social competence (the ability to affect behaviors and feelings of others in the way that an individual intends and society expects, Trower, Bryant, & Argyle, 1978). Since all human behaviors are caused by the interplay between the individual and an ever-changing environment (Bandura, 1977, 1986), the social skills theoretician and practitioner must consider and manipulate the cues, prompts and reinforcers which are present in the individual's environment.

ACHIEVING A MODEL OF SOCIAL COMPETENCE

Figure 1 presents a schematic view of social competence based on a modification of McFall's (1982) systems approach to social competence and encompasses constructs described by Meichenbaum et al. (1981). The model presented here encompasses six key areas: decoding skills, decision skills, performance skills, self-monitoring judgments, environmental judgments and cognitive structures.

Insert Figure 1 about here

Decoding Skills

Decoding skills refer to the processes by which incoming sensory information is received and perceived. A preliminary step in the reaction to any environmental stimuli is the ability to receive, or absorb, that stimuli through one of the sense modalities. Correctly perceiving social stimuli refers to the individual's ability to attend to, and discriminate between, different types of environmental stimuli (auditory, olfactory, visual, tactile, motor). Following reception of the stimulus, the individual must perceive the stimulus as a referent to other stimuli and events along a temporal continuum.

Decision Skills

Decision skills are those skills with which an individual correctly interprets a stimulus and generates possible response options suitable for an appropriate reaction. After possible response options are generated, they are compared with skills present in the actor's behavioral repertoire and a suitable, and executable, behavior is chosen for performance.

Decoding Skills and Decision Skills may also be explained as discriminative stimuli (S^Ds). However, a conceptualization of these processes as a series S^Ds does not allow a finer breakdown of the construct of social competence. By attempting to outline each component step in the identification, and reaction to, an S^D (or series of S^Ds) the theoretician and practitioner is allowing for the development of intervention strategies which focus on these sub-skills.

Performance Skills

Following the designation of an appropriate and executable behavioral response to the initial stimulus, the individual must execute the behavior. Performance skills include verbal and non-verbal communication (eye contact, body posture, tone of voice, facial expression, body orientation) as well as molecular behavioral skills such as the initiation or termination of dyadic conversation (Trower, Bryant, & Argyle, 1978).

Self-monitoring Judgement

The ability to self-monitor one's own behavior, and to make a judgement of whether that behavior was effectively or ineffectively executed is a major determinant of whether that behavioral skill will be repeated in the future.

Environmental Judgement

The executed behavior is also observed by others who may render a positive or negative judgement concerning its appropriateness and skill level. These observers will then react to the overt behavior by emitting a new set of external stimuli. Environmental judgments as positive or negative (appropriate or inappropriate) will simultaneously impact upon the actor's own feelings of self-efficacy.

Cognitive Structures

Through the individual's self-monitoring of his behavior, and through environmental reaction to that same behavior, conclusions are drawn which effect feelings of self-efficacy and levels of self-presentational anxiety. If the individual interprets his behavior as appropriate and skillful, feelings of self-efficacy and a reduction in self-presentational anxiety will result; on the other hand, if the individual determines that the behavior was neither appropriate nor skillful, feelings of self-efficacy will be diminished along with increased self-presentational anxiety. Whatever the outcome, the individual's judgments regarding the "success" or "failure" of his behavioral response will effect his future decision making skills. Skills judged in a positive light will stand a higher probability of being repeated; skills which receive only negative reactions from others (as well as from the individual) will stand a lower probably of being repeated in the future.

A behavior analytical approach to social competence typically views social skills as an interplay between environmental stimuli which act as a S^D to cue the individual to perform a behavioral chain from a skill repertoire. Correct execution of the behavioral skill will result in consequences from the environment which will then increase the probability that the specific will recur in the future in similar situations. The cognitive-behavioral approach presented above does not differ with this conceptualization; rather it attempts to define the cognitive precess involved in the individual's reaction to the S^D. By breaking down this activity into the processes involved it is hoped that training in those processes will be able to effectively increase the individual's socially competent behavior.

As an example let us re-examine the social situation previously presented (the party). A person entering the room who is being greeted by his host will typically respond with a return greeting. The host's greeting in its specific surroundings is an S^D for the return greeting. The S^D for a greeting must be correctly received and then perceived by our guest; he must then be able to interpret that greeting in the context of that specific social situation. As the S^D cues him for a response, he simultaneously generates possible responses and chooses that response which he feels he is most capable of executing and which will be most appropriate (and which will have the greatest positive reinforcing qualities).

As our guest responds, he will monitor the effect that his response has on the host. If he perceives the effect to coincide with what he desired or anticipated, he will most likely use the same response when in a similar situation in the future; if his return greeting has a disastrous effect, he will be unlikely to repeat that behavior in that type of situation again. If the host reacts favorably to his return greeting, the probability that the behavior will be repeated will be further increased.

As a result of the individual's own judgments regarding the effectiveness of his response, along with the host's reaction to his behavior, his own feelings of self-efficacy and self-presentational anxiety will be modified. If all goes well, our guest's motivation and affective response to the social situation will increase the probability that he will act in a likewise manner in the future.

A MODEL FOR SOCIAL SKILLS TRAINING

A molecular model of social skills training attempts to train each molecular behavioral skill based on a task analysis using such methods as discussions, role-rehearsal, role-reversal and behavioral homework (Gaylord-Ross et al., 1984; Van Den Pol, Iwata, Ivancic, Page, Neef, & Whitley, 1981); for an exemplary study using this approach the reader is referred to the Gaylord-Ross et al. (1984) study discussed above. This is a commonly used approach in social skills training for special populations (Abordo & Vreeland, 1987; Davies & Rogers, 1985; Foxx, McMorrow, Bittle, & Ness, 1986). Such a molecular model of social skills approaches social skills by training specific observable behavioral units which are the building blocks of an individual's overall performance in a specific interpersonal situation.

Lack of emphasis on generative social skills (the ability to continually execute behaviors in a skillful manner in all situations and times) but rather on component behaviors may account for the low level of generalization and maintenance of treatment gains among different populations of social skills trainees (e.g., Breen et al., 1985; Stokes & Baer, 1977). Social learning theory (Bandura, 1977, 1986) links maintenance and generalization of treatment gains directly with increased perceptions of self-efficacy. As the individual becomes a generator of behavioral options, he will become less reliant on external sources of change. Bandura (1986) writes that internal reinforcers, namely enhanced feelings of self-efficacy, are instrumental in achieving generalization of behavior change. A process approach to social skills training (Gambrill, 1985; Trower, 1982, 1984) regards the individual as an agent for his own change. The individual is considered an active agent, suggesting that social skills training should emphasize the process of generating socially skillful performance rather that emphasizing component behaviors by themselves. By training clients in appropriate decision making skills, as well as in skillful behavioral performance we hope that individuals will internalize the process of creating socially skillful behaviors, enabling future generation of skillful behavioral responses in a variety of different settings.

In a process approach to SST, specific molecular behavioral skills are not taught in order to be transferred to new and specific situations, instead the process of deciding which skills to use and the correct execution of those skills are taught. As such, training solely behavioral responses is considered inadequate; social skills training must include instruction in decision skills (interpreting the stimuli; generating possible responses; the ability to compare and then select response options from a "pool" of response capabilities) and in performance skills (actual performance of the behavior and self-monitoring of its execution). Through teaching the individual the process involved in the generation of appropriate social skills, the practitioner will be training social skills instead of a social skill.

SELF-MONITORING AND SST WITH HANDICAPPED ADULTS

Many social skills training programs for mentally retarded persons use the trainer as an external change agent (Rusch, Martin, & White, 1985; Wehman, Schutz, Bates, Renzaglia, & Karan, 1978). In this type of setting, the generalization of treatment gains is restricted as the trainer takes on the properties of a cue or discriminative stimulus (S^D). Following training, the target behaviors may occur only in the presence of the trainer, limiting maintenance and generalization of the newly acquired skill.

Appropriate strategies must be employed which will allow stimulus control to be transferred from external to internal sources (Stokes & Baer, 1977). Additionally, ethical, legal and philosophical implications of externally controlling behavior has resulted in increased exploration of alternative methods of behavioral treatments. Behavior analysts have an obligation to encourage their clients to become active influences in their own behavioral change (Gardner, Cole, Berry, & Nowinski, 1983; Siegel et al., in press).

Self-management procedures (i.e., self-management, self-monitoring, and self-reinforcement) can provide a means by which stimulus control becomes internalized, facilitating maintenance and generalization of behavior change (Bandura, 1986; Fowler, 1984; Gifford, Rusch, Martin, & White, 1984; Mank & Horner, 1987; O'Leary & Dubey, 1979; Rosenbaum & Drabman, 1979; Rusch & Schutz, 1981; Siegel et al., in press; Wacker & Berg, 1983), as well as a means by which the individual takes an active role in his behavioral treatment (Gardner, et al., 1983).

Self-management techniques with mentally retarded adults have been used to improve the mentally retarded individuals' performance (Bates, Renzaglia, & Clees, 1980; Fowler, 1984; McNally, Kompik, & Sherman, 1984; Sowers, Rusch, Connis, & Cummings, 1980; Sowers, Verdi, Bourbeau, & Sheehan, 1985) in a cost-effective manner (Fowler, 1984; Storey & Gaylord-Ross, 1987). This treatment strategy has taken many forms; from the use of picture-cues to aid mentally retarded persons to perform a sequence of job related tasks correctly (Sowers et al., 1980; Sowers et al., 1985), to the use of self-instructional talk (Agran, Fodor-Davis, & Moore, 1986) and has been shown to be simple for the mentally retarded client to learn without excessive training (Mank & Horner, 1987). From the wide body of literature on social skills training with mentally retarded individuals it is apparent that research has failed to adequately use recent advances in self-management strategies to promote maintenance and generalization of gains from social skills training.

AN APPLICATION OF THE MODEL IN RESEARCH

Following is a pilot SST intervention program based on a process approach which included self-management procedures to improve behavioral skills associated with effectively asking for assistance from a teacher in a classroom setting. Effectively soliciting assistance from a supervisor has been shown to be a social skill of primary importance for success on the job site (Cheney & Foss, 1984). Specifically, this study examined the hypothesis that social skills training based on a process approach (Trower, 1984) using self-management strategies in a cognitive behavioral group format (Rose & Edelson, 1987) would improve the quality of solicitations of assistance in the classroom and would generalize to other classrooms.

Method

Setting and Participants

A group of eight mentally retarded college students (mean age 21.25) with mild to moderate mental retardation was chosen for participation in the training group. All group members were chosen for participation according to a series of therapeutic criteria: all clients possessed skill deficiencies in the target behavior, displayed mild or moderate mental retardation, were single and ethnically heterogeneous. All group members were enrolled in a small and local community college's vocational and independent living skills program (V/LS) for mentally retarded adults. Upon entering the V/LS program, all students explicitly expressed a desire to attain competitive or semi-competitive employment and move into an independent or semi-independent living situation.

Three out of these eight students were randomly identified and subsequently recruited for participation in this research project. Data were collected for these three students, although they received the same intervention as the rest of the social skills training group. A sub-group of three was chosen because this undertaking was executed as a pilot study for a doctoral dissertation in special education, and as such, a sub-group of three was sufficient to supply the researcher with instructional and clinical feedback regarding the efficacy of the training program.

Robert, a Filipino male (age 21) was chosen as a participant in the sub-group due to his instructors' and job coaches' opinion that he was severely lacking in the ability to appropriately solicit assistance. Robert was diagnosed with moderate mental retardation and possesses a full scale WAIS score of 66. Robert previously participated in a social skills training group dealing with this same subject as well as several others; however, this previous experience was unsuccessful in modifying the target skill.

Maria, a 22 year old hispanic female was chosen for participation in the sub-group primarily because of a high risk of being dropped from the V/LS training program due to highly inappropriate social skills. Maria has been diagnosed with Childhood Onset Pervasive

Developmental Disorder (DSM III-R: 299.90) and possesses a full scale WAIS score of 84; her functioning is classified as being in the moderately mentally retarded range. Maria's teachers report that Maria either could not, or would not, solicit assistance when faced with a difficult task; and upon asking for help, would do so inappropriately. Instead of asking for help, Maria would typically sit at her work place quietly and stare.

Janet (aged 26) was chosen for participation in the sub-group primarily due to her inability to appropriately solicit assistance from a teacher or job trainer. Janet was diagnosed with mild mental retardation with a full scale WAIS score of 61 and has a long history of substance abuse and addiction. Her teachers relate that Janet would often solicit assistance in a whining and complaining manner which would incline the other person to refuse to lend assistance.

Experimental Design

A multiple baseline design across behaviors was used to evaluate the effects of the social skills training program. Data collection in the form of behavioral probes was performed in regular classroom settings outside of the social skills training group.

Data Collection and Procedures

Observations and data collection were made in all classroom settings where the trainer also acts as a teacher of functional math and English. All data were collected as probe data in the classroom; no data were collected during the actual training sessions.

Reliability. All observational data were collected by a trained paraprofessional instructional aide who was trained to observe the target behaviors to 100% accuracy criterion in specially designed training sessions.

Reliability scoring was done by comparing observations to those of another trained observer using the formula: Reliability = agreements divided by (agreements + disagreements). Over the entire 19 days of data collection, reliability data were collected on six randomly chosen days (twice for each phase of the task analysis) for two hours each day with a median reliability quotient of .90 (range = .85 - .95). The instructional aide was not informed as to which days reliability would be checked.

Treatment Package

Group mechanics. The social skills training package was presented in a group format to all eight members simultaneously. The group met for 15 consecutive sessions on a bi-weekly basis. The social skills training group functions as an integral part of the V/LS program; as such attendance and participation are mandatory to ensure continued enrollment in the program.

Curricular organization. A task analysis of the target skill (soliciting assistance in a classroom) was conducted by observing students interact and solicit assistance from their teachers (including, and other than, the trainer) three times weekly for two hours at a time over a period of two weeks (a total of 12 hours of observations); the task analysis revealed five separate behavioral components. (a) approaching the other person; (b) greeting the other person; (c) specifying a problem; (d) asking for help; and (e) terminating or acknowledging the aid. Consequently, the training curriculum was divided into three distinct parts: part one consisted of the introduction of the first two stages of the task analysis; part two consisted of the addition of the third and fourth stages of the task analysis and the third part of the training consisted of the addition of the fifth stage of the task analysis.

Throughout all stages of the intervention treatment emphasis was placed in two specific areas of training: training in decision skills (interpretation and response generation) and in increasing the skill level of the behavioral repertoire. This was accomplished through discussions and interpretations of the role-play vignettes and analyses of the behaviors required to respond to the role play, followed by verbally reviewing the next three steps in the Decision Skills area of response generation (refer to Figure 1): generation of responses, comparison of those behavioral choices to the behavioral repertoire and a choice of an appropriate behavioral response.

Appendix 1 presents an actual group lesson plan. Accompanying non-verbal cues such as body posture, body orientation, voice tone, facial expression and eye contact (Trower, Bryant, & Argyle, 1978) were discussed and practiced, although specific emphasis was not placed on these molecular behavioral skills. During training emphasis was also placed on decision skills necessary for producing socially skillful responses to environmental stimuli.

All group meetings lasted for 1 hour 15 minutes and took place in the college classroom, and were organized according to the same schedule: welcoming group members to the group, a short review of the homework assignment, marking off the "group thermometer" (a graphic picture of a thermometer where each instance of treatment compliance is marked off as a rising temperature; as the "temperature" reaches the "boiling point" group members are rewarded through positive contingent reinforcements; this method is further described in

Rose & Edelson, 1987), and a discussion and review of the topic under discussion using the effective instruction teaching model (introduction and discussion of new topics, direct instruction of new skills, guided practice, independent practice, maintenance and generalization training; this teaching strategy is further discussed in Mercer & Mercer, 1989). After each group member practiced the target behavior with 100% proficiency, independent practice role-play to the same criterion level and dissemination of the homework assignment followed. Two group facilitators were present for each group meeting: the investigator (an instructor in the Vocational/Living Skills Program) and an instructional aide.

In addition to behavioral rehearsals and reversals, each group member was required to practice each subskill as homework at least twice before the next group meeting. After completing each homework assignment (see Appendix 1 for an example of such an assignment), the group leader marked off the "group thermometer". Submission of a behavioral homework assignment would mean the marking off of "temperature" levels on a poster. The "group thermometer" served two functions: it increased group cohesiveness by giving the group a common goal (having the "temperature" level reach the boiling point, at which time the group members would be treated to refreshments) while at the same time acting as a conditioned contingent positive reinforcement for each individual's completion of the behavioral homework assignment.

Each phase of the task analysis was presented using the same pattern. A verbal description of the target skill was presented along with accompanying group discussion regarding the rationale for using that skill. Specifically, circumstances where the use of the target behavior would be appropriate were discussed. Following the group discussions, group leaders modeled the appropriate skills. Modeling was performed along with the trainer's simultaneous verbal mediation and description of each of the six stages of the model of social competence (Figure 1) presented above. Discussions regarding the six stages of the model of social competence were conducted on a concrete level with questions such as: "If you saw your boss looking at you with a smile on her face, what would you think she was thinking?" followed by "In that case, what do you think would be the best way for you to react?". Following modeling, the new skill was practiced by all group members in guided practice role-plays (Mercer & Mercer, 1989) during which time the actor would describe verbally the six phases of the conceptual model. During these role-plays group leaders would coach and guide group members to perform the target skills errorlessly. After each group member was able to perform the behavior at a criterion level of 100% successful performance during guided practice, the group member performed at least one independent practice role-play (Mercer & Mercer, 1989). In independent practice role-plays the student was required to errorlessly perform the target behaviors without coaching or guidance from the group leaders. A subsequent review and reteaching of skill deficient behaviors followed each phase of the preview, guided practice and independent practice role plays.

Self-management. Self-monitoring and self-reinforcement were used to increase the probabilities for maintenance and generalization of target behaviors. Following each guided and independent practice role-play, group members completed self-monitoring sheets where they evaluated their own behaviors (as well as the behaviors of their partner in the role-play). Each self-monitoring sheet (see Appendix 1) required the group member to evaluate his or her performance in terms of how effective and how appropriate the necessary behavior skills were performed (including the four non-verbal behaviors).

In order to facilitate treatment compliance with the homework, a second use of self-management procedures was employed. Colored poker chips were distributed to each group member according to the number of solicitations of assistance they were required to make for homework. After the appropriate completion of the behavioral assignment the group member would give the teacher (i.e., pay) one poker chip. Clients were told that in order to successfully complete the behavioral homework, they would need to get rid of all of the poker chips in their possession.

For instance, if the behavioral homework entailed soliciting assistance two times from a teacher, the group member would be given two colored poker chips. After each successful request for aid (requests for assistance which exhibited the necessary behavioral steps), the group member would produce a poker chip and present it to the teacher being asked for help. An elaboration of this process using differently colored chips allowed the trainer to specify which teachers would be asked for help in the generalization phase of the skill training. Instructions were given to the group members to the effect that they were required to ask for assistance from other teachers in other settings; the different teachers would accept (be "paid" by) different colored poker chips. It was anticipated that this use of self-management chips would serve two functions: it would cue the group members to complete their homework assignment, and it would act as a conditioned self-reinforcer for the group members.

Results

Figures 2, 3, and 4 report the effects of the social skills training for Robert, Maria and Janet, respectively. All three participants exhibited the same general trend: a change in the quantity of solicitations for assistance concurrent with the progressively more appropriate use of the different behavioral skills being trained. Through an examination of the nine baseline phases (three from each multiple baseline) the observer will note apparent data instability for all three subjects. The pattern is clear: each subject exhibited different aspects of the target behaviors at different times; however, there seems to be no clear pattern to when those behaviors were used; nor is there any evidence as to whether the different subskills were performed in the correct order. Clearly, in this case, optimum results of this research would show the stabilization of these behavioral skills. Such stabilization would manifest itself by each subject exhibiting each skill aptly executed and in its correct sequence each time he or she solicits assistance.

Figure 2 reports data obtained for Robert. Following an unstable baseline along with subsequent data instability until approximately session 11, Robert was able to concurrently reduce the amount of questions asked while increasing the quality of skillfully asked questions. This trend is noticeable in all three treatment phases. In other words, a clear trend is evident for Robert; he was able to solicit assistance while performing target behaviors in the correct sequence more effectively while at the same time reducing the overall number of solicitations for assistance during the two hour class. The consolidation and concurrent reduction in the quantity of solicitations is most noticeable in the first treatment phase; the intervention at this stage of the therapy attempted to remediate behavioral skills which were already within Robert's behavioral repertoire.

Insert Figure 2 about here

Figure 3, showing Maria's acquisition and performance of the target skills shows a similar trend to that of Robert. Post-baseline data show a steadily increasing use and combination of the skills being taught; however the use of these new behavioral skills remains unstable until approximately session 13. Again, the marked increase in the amount of solicitations of assistance over the course of the class period is immediately apparent.

Insert Figure 3 about here

Data showing Janet's progress throughout the training program (see Figure 4) show the same trends as do the data from Maria. Even though Janet was absent for periods throughout the training, a marked increase in the quantity and quality of solicitations for assistance is apparent. For this student, performance appears to change at approximately session 13, although Janet shows less unstable behavioral performance than do her two counterparts.

Insert Figure 4 about here

It is interesting to note that the two initial sub-skills taught (approaching the teacher or raising one's hand and greeting the teacher) required a relatively long learning curve before the three group members began to link those behaviors together as a sequential unit. For all three participants, requests for assistance began to encompass both of these behavioral sub-skills only after approximately twelve group sessions. Additionally, beginning with session 13, the "pay with the poker chip" phase of self-management was introduced. This method, as previously discussed, increased treatment compliance and therefore treatment gains.

The second group of sub-skills (asking the other person for time and stating the nature of the problem) reacted to the treatment intervention similarly as the two previously trained behaviors. For these behavioral skills, session 13 seems to be a turning point in the sequential performance of the requisite skills; consequently, the lead time after introduction of the new skills and their sequential performance was only four classroom sessions. At the time of the introduction of the last behavioral skill (termination), all three students were able to quickly assimilate the new behavior into their skill repertoire.

Discussion of Research Results

Results of this study demonstrated a marked improvement in both quality and quantity of requests for assistance made by three adults functioning at mild and moderate levels of mental retardation. Post baseline data lends support to the hypothesis that training in the appropriate manner to solicit assistance will enable the subjects to consistently solicit help from a teacher in a more appropriate manner; for all three participants the performance of the target behavioral skills became more stable (was performed correctly and in the proper behavioral sequence as described in the task analysis).

For one participant, Robert, who tended to request assistance frequently and in an inappropriate manner (appropriate and inappropriate being defined by adherence, or lack of adherence, to the task analysis of the behavioral skill, and not by the outcome of the solicitation of assistance), the treatment was successful in both reducing the number of requests for help as well as improving the quality of those solicitations. It must be noted, however, that the change in the quantity of solicitations for assistance was an incidental result of the treatment package, yet one which Robert's teachers are thankful for. For the other two group members, both showing an inability to appropriately and effectively solicit assistance when necessary, a marked increase in the number of requests for help was evident and was also appreciated by their teachers. In addition, as suggested by the jump in data stability around session 13, the use of the self-management "pay with the poker chip" method appears to have a positive influence on treatment gains for all three participants.

There are a number of important incidental and anecdotal findings of this study. First, although no data were collected, it seemed that toward the latter half of the group meetings, group members were able to more accurately interpret situations presented in group role-play vignettes and were able to engage in other Decision Skills (generate responses, compare possible responses to their behavioral repertoire and choose a suitable response) with greater speed and ease.

Second, in keeping with the six-systems paradigm outlined earlier, an increase in these three clients' behavioral skills in this one area seemed to have a clear impact in increasing their level of personal enjoyment in attending classes in the Vocational/Living Skills program where they were enrolled. Interacting with others in a more positive manner increased the amount and quality of positive reinforcements from program staff members which in turn served to further strengthen these and other behavioral skills.

Follow-up data on the three participants is currently being collected; preliminary findings suggest a significant level of maintenance of treatment gains as well as generalization into different classroom settings for all three participants. However, in the future, this aspect of the experimental design should be stressed more heavily.

An interesting question raised by this research will need to be answered in subsequent studies in this area. Analysis of the correct performance of the appropriate behavioral skills yields only partial information. In the future it will be interesting to note how the target person (the person being asked for help) will react to the request for assistance, and how that reaction will influence the subject's choice of behavioral skills in future similar situations (the Decision Skills section of the conceptual model).

The finding that this group cognitive-behavioral approach to social skills training coupled with the use of self-management techniques has led to stable behavioral change (at least as of this date) within the original classroom setting suggests that this same group framework should be further expanded. Future research on this subject must more actively program for maintenance and generalization (Stokes & Baer, 1977; Wildman & Wildman, 1980) across times, situations (other classrooms with other teachers as well as vocational settings) and with other behaviors. Also, it remains to be seen how this same treatment approach can be used for other types of social skills (i.e., accepting and responding to criticism - a behavioral skill where the individual assumes a more passive role).

CONCLUSION

The desire to impart to our clients new and appropriately skillful behaviors is clearly an honorable endeavor. However, our responsibility to our clients does not end there; it is our responsibility to equip our clients with the skills to become proactive generators of their own skillful behaviors. A process approach to social skills training built on the six-systems model of social competence attempts to do just that. An attempt is made to influence not only the individual's overt behaviors, but also to influence the process involved in choosing that behavior over other possible behavioral choices to be executed.

The process approach presented above, in theory as well as in practice, attempts to empower the handicapped individual with the ability to make intelligent and appropriate decisions regarding the use of social skills. Empowerment in this field of social skills training hopes to remove the client from a typically passive role in the treatment paradigm and to place him in a position of control over his own behaviors.

A process approach to social skills training with handicapped individuals can be summarized in a single sentence: it attempts to teach the mechanism of skillful behavior generation in order to facilitate the carry over of those skills to other situations and times rather than the training of specific behavioral responses to specific environmental cues. We, as special educators, have a philosophical and moral mandate to assist our clients to become independent to the greatest extent possible; a process approach to social skills training is an important step in that direction.

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Appendix 1.

SOLICITING HELP # 4

Objectives: Group members will practice greeting an individual who they are going to ask for assistance.

Materials: Read and make copies of SOLICIT 8,9, 10 and 11

- I. Welcome back group members
  - A. collect homework assignments
    - 1. mark off group thermometer
    - 2. stress the importance of completing homework assignments
    - 3. discuss each group member's homework assignment

- II. Discuss with group members the reasons it is important to be polite when one solicits assistance from another person
  - A. discuss with group members the improvements apparent since the last group meeting
  - B. mention to the group members that most of them still do not adequately approach and/or greet their teachers when they solicit assistance
    - 1. review the importance of approaching and greeting the other person

- III. Guided practice
  - A. divide group members into 4 groups of 2
    - 1. each group member will serve as the "buddy" for the other group member
    - 2. distribute to each group member SOLICIT # 8
    - 3. each person will read the passage and answer the 8 questions afterwards
    - 4. each "buddy" will prompt the other group member to approach one of the group facilitators and solicit assistance or to have his/her work checked
      - a. the "buddy" will fill out the evaluation sheet SOLICIT # 9
    - 5. every group member should approach a teacher at least once during the exercise

            - a. special attention should be paid to greeting the teacher before soliciting assistance
                - (1) the "buddy" should remind his/her partner to appropriately greet the teacher

IV. Homework and independent practice
    - A. each group member will ask a teacher/work supervisor or other assistance three times before the next group meeting
        - 1. will complete SOLICIT 11

V. Closure
    - A. make sure each group member completely understands the homework assignment

Human Development
Fall 1988

Tom Gumpel
COA

Beginning to ask for help from others involves two stages: going up to the other person and then "breaking the ice".

Common errors in greeting behaviors are:

- not smiling
- mumbling (people can't hear what you say)
- avoiding eye contact
- offering a "twitch" instead of a smile
- asking a question but not waiting for an answer

There are different kinds of greetings that are considered to be effective in a school or work situation:

- Hi
- Excuse me, but I don't understand this
- Hi, could you help me, I'm having a problem
- This is hard for me, could you explain it to me?

Some kinds of greetings not to use are:

- I can't do this.
- Boy, this is too hard for me.
- Help me.

SOLICIT 8

* (no greeting at all)

Thinking about how you might ask someone for help in various situations will help you develop the useful habit of planning and rehearsing. You will be more likely to actually get help from another person if you plan and rehearse the requests for help. If you take some time beforehand to think about, and plan, what you will say there is a greater chance that your request for help will be answered.

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Name ______
Date ______

Answer the following 6 questions

1. What is the first step you must do when you ask someone for assistance?

____

____

2. What is the second step you must do when you ask someone for assistance?

____

____

3. Why is it important to approach the other person when you ask him or her for help?

____

____

4. Why is it important to greet the other person when you ask him or her for help?

____

____

5. Why is it important to be polite when you are asking someone for assistance?

____

____

6. Who do you usually ask for help, and what do you ask for help in?

____

____

SOLICIT 8

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Name ______
Date ______

Fill out this form after your partner has asked for help

	NOT SO GOOD	GOOD
How was his/her EYE-CONTACT?		
How was his/her BODY POSTURE?		
How was his/her EXPRESSION?		
How was his/her VOICE?		
Did he/she APPROACH the teacher?		
Did he/she GREET the teacher?		

Name of your partner ______

SOLICIT 9

Human Development
Fall 1988

Name ______
Date ______

Fill out this form after you have asked or help

	NOT SO GOOD	GOOD
How was your EYE-CONTACT?		
How was your BODY POSTURE?		
How was your EXPRESSION?		
How was your VOICE?		
Did you APPROACH the person?		
Did you GREET the person?		

What day and date did you ask for help? ____________________

Describe where you asked for help ____________________

SOLICIT 10

Human Development
Fall 1988

Name ______
Date ______

Fill out this form after you have asked for help

	NOT SO GOOD	GOOD
How was your EYE-CONTACT?		
How was your BODY POSTURE?		
How was your EXPRESSION?		
How was your VOICE?		
Did you APPROACH the person?		
Did you GREET the person?		

What day and date did you ask for help? ____________________

Describe where you asked for help ____________________

SOLICIT 10

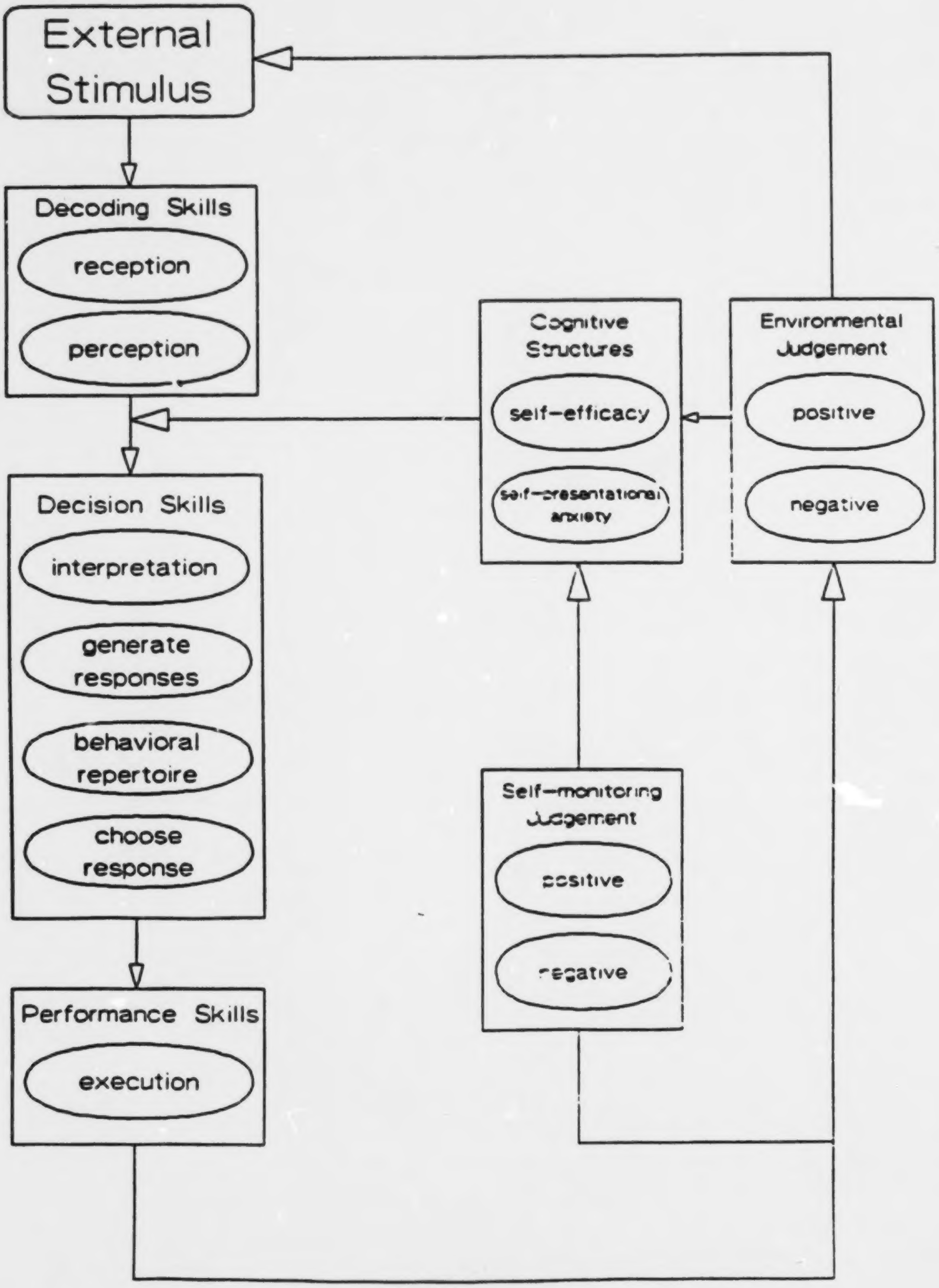
Figure Captions

Figure 1. A schematic flow chart describing a six-systems cognitive-behavioral conceptualization of social competence.

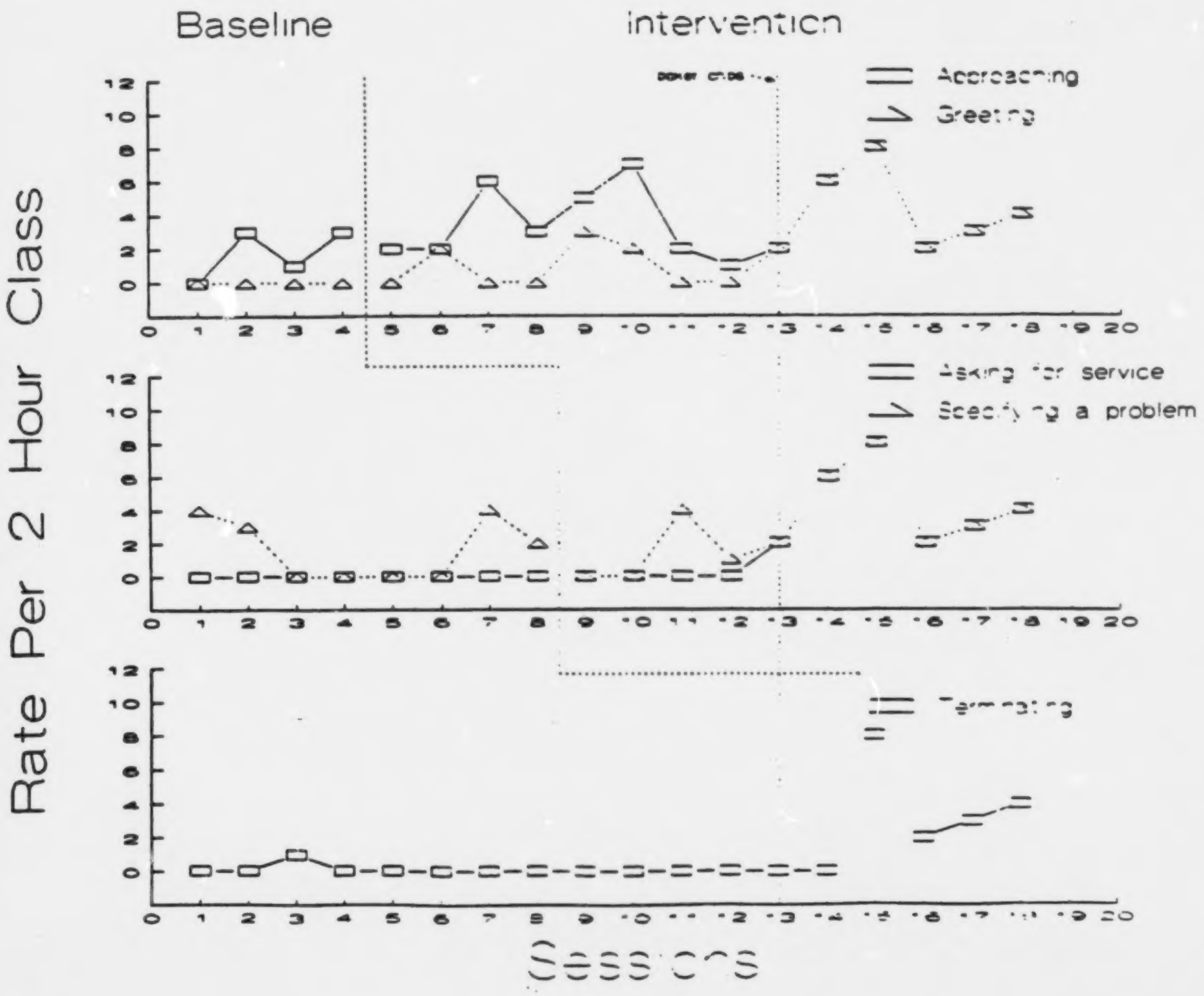
Figure 2. Rate of correctly executed solicitations for assistance by Robert during a two hour class, broken down by each of the three phases of the task analysis.

Figure 3. Rate of correctly executed solicitations for assistance by Maria during a two hour class, broken down by each of the three phases of the task analysis.

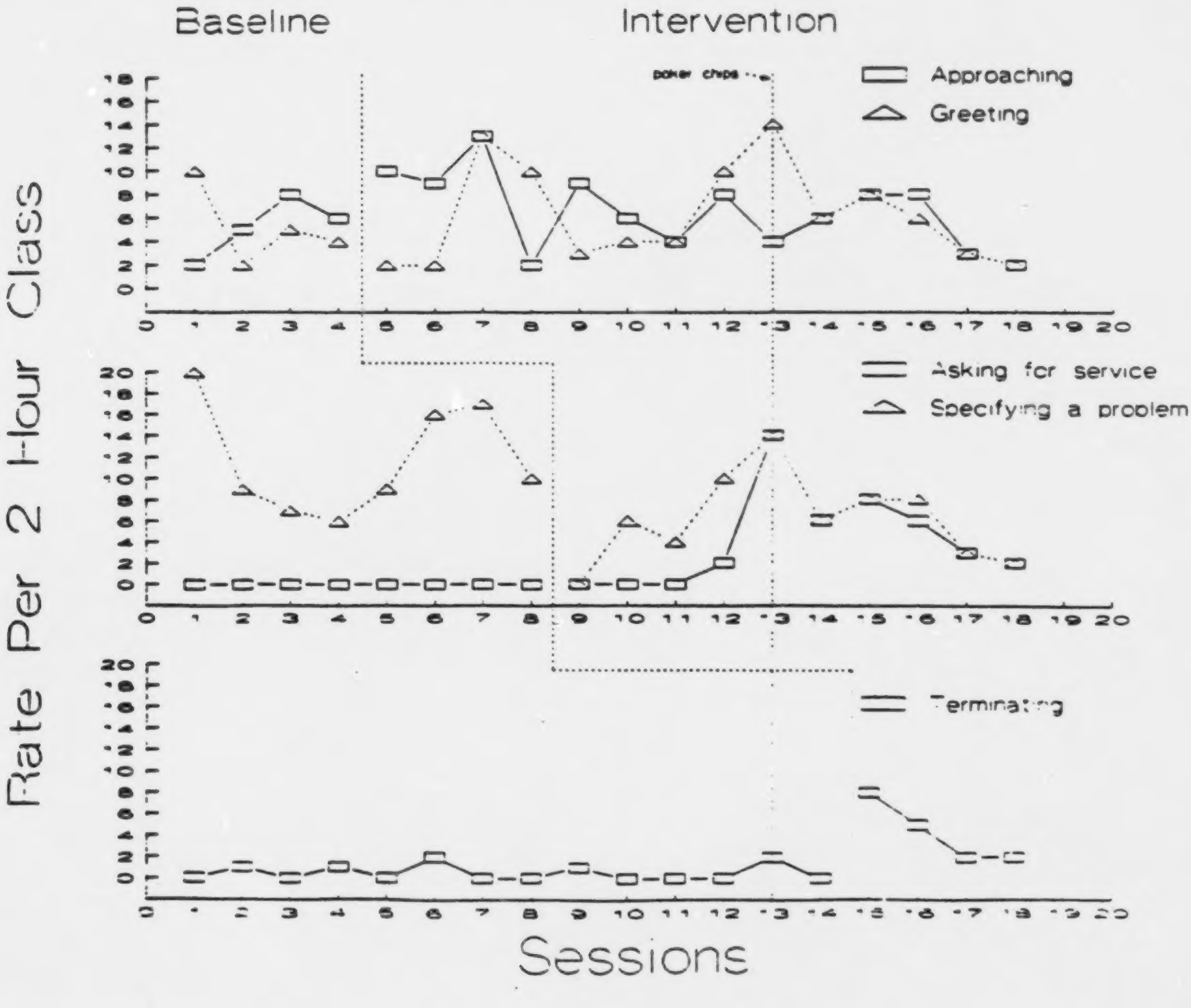
Figure 4. Rate of correctly executed solicitations for assistance by Janet during a two hour class, broken down by each of the three phases of the task analysis.


External Stimulus
Decoding Skills
reception
perception
Decision Skills
interpretation
generate responses
behavioral repertoire
choose response
Performance Skills
execution
Cognitive Structures
self-efficacy
self-presentational anxiety
Environmental Judgement
positive
negative
Self-monitoring Judgement
positive
negative

Maria


Baseline
Intervention
poker chips
Approaching
Greeting
Asking for service
Specifying a problem
Terminating
Rate Per 2 Hour Class
Sessions
0 2 4 6 8 10 12
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Robert


Baseline
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poker chips
Approaching
Greeting
Asking for service
Specifying a problem
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Rate Per 2 Hour Class
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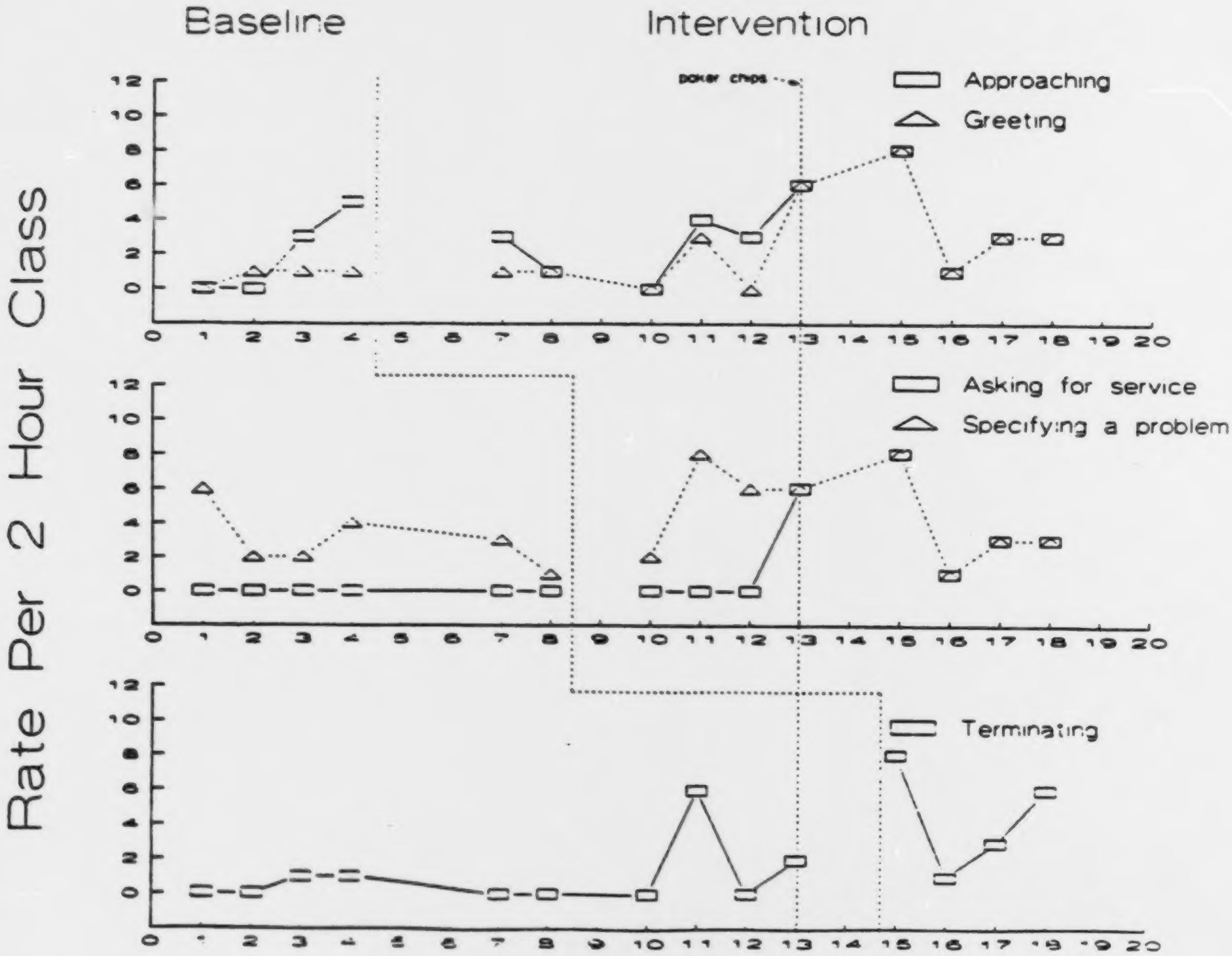
Janet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Social and Vocational Factors in the Employment of Persons with Developmental Disabilities

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In R. Remmington (Ed.), Severe handicaps and issues in behavioral analysis. New York: John Wiley & Sons.

There have been many notable changes of late in vocational education for disabled youth. Until recently, most developmentally persons were not considered capable of substantive employment in real work settings. Rather, they were trained for likely employment in sheltered workshops. The training, in fact, took place in special education classrooms, often located in all-handicapped schools. The professional with cursory interests in developmental disabilities ought to be aware of the near-revolutionary changes in service delivery for this population. The "least restrictive environment" movement in the U.S. (and in some European countries like Italy) has placed an increasing number of disabled students in regular public school (Gaylord-Ross, 1987). In addition, a "functional curriculum" approach has emerged which prepares the individual for survival in real adult environments, rather than focusing on academic and developmental tasks. Functional curriculum has also led to attention to the setting where instruction takes place under the assumption that: a) disabled students have limited transfer of learning skills, and b) that maximal generalization will occur when there is a relative correspondence between the training and criterion environments. In actual practice, the logic went that if a person was to work on an assembly line in a factory, then he should be trained in a similar assembly line or factory. A cogent point was made that school-based, simulated environments could not approximate the stimulus of real work settings (Horner, 1988). Thus, a "community-based" training approach emerged whereby students were trained in real work settings, actual restaurants, and shopping malls in order to guarantee that they could perform functional skills in their criterion settings.

Subsequently, community-based school integration led to a concern about what would happen to disabled adults upon leaving school. The prospects were quite dismal. Adults worked in sheltered workshops, at best, and at worst remained on waiting lists (i.e., spent their days at home) for enrollment in segregated day programs (Word & Halloran, 1989). The "transition" initiative created much activity to move school-leavers from integrated school and community training environments to similar adult nonsheltered work and community living arrangements. While we are still in the infancy of the transition initiative, a substantial number of projects have demonstrated that disabled adults, even those with the most severe disabilities, can be successfully employed in nonsheltered work settings (Rusch, 1990). It could be predicted that further empirically documented successes will create a data base which could unambiguously be supported by policy makers and funding agencies (Gaylord-Ross, 1990). Thus, integrated employment (and residential) services for adults are likely to catch up with these school based advances made with disabled children and youth.

Research Issues

In spite of (or perhaps because of) these program and policy advances, there exist a number of research issues related to integrated vocational education. These issues may be construed from an ecosocial framework (Gaylord-Ross, Park, Cameto, Tappe, 1989). That is, some issues focus primarily on the individual, in terms of learning and social interaction. Some matters weigh more heavily on the surrounding ecology of the workplace. In almost all cases, though, there is some interaction between the individual and the ecology. Thus, an ecosocial framework may elegantly account for the multiple factors affecting behavior in the workplace (cf. Chadsey-Rusch & Rusch, 1988).

In the remainder of the chapter four topics are addressed. First, the question of which is the best way to train developmentally disabled persons on-the-job is examined through a series of studies. Next, the methods and difficulties in measuring social behavior in the workplace are explained. Third, a number of ways to train social skills are described and evaluated. Clearly, research on social and vocational behavior in the workplace is a relatively unaddressed topic. Earlier work relied mostly on surveys and questionnaires to assess the nature of social life in the workplace. While valuable, we are biased toward direct behavioral observation as being the most useful way to assess the social environment and to evaluate effective interventions in the workplace.

Job Skills Training

Supported Employment: Current State-of-Affairs

Employment has long been the focus of habilitation services (Salzberg, Lignugaris/Kraft, & McCuller, 1988). However, for the first time, individuals with severe disabilities are being placed in jobs and professionals are asking what supports are needed for long-term employment success. The supported employment movement is gaining momentum as more individuals with disabilities obtain employment, and the benefits become increasingly evident. While there are several supported employment models (Kregel, Wehman, & Banks, in press; Mank, Rhodes, & Bellemy, 1986), individualized employment is emerging as the preferred model when it is possible. In individualized employment, workers with disabilities work as employees of community businesses where, ideally, they interact primarily with non-disabled workers and are accountable for their assigned responsibilities. Compared to other supported employment models, workers in individualized employment enjoy better wages, active integration, and fringe benefits (Kregel et al., in press). In this approach, specialists, often referred to as job coaches, orchestrate the job placement and training process.

Job coach systems have been described elsewhere (Wehman & Kregel, 1989). Thus, their essential functions will only be summarized here. A coach first finds a job that matches an individual with disabilities. Then, the coach learns the job, analyzing the tasks and performance criteria needed for success. Next, the worker receives on-site training from the coach, who uses a variety of methods to teach the necessary skills. The job coach may also help the worker with other problems that affect employability (e.g., transportation, dress) and encourage positive social interaction between the disabled worker and co-workers, especially during breaks and lunch periods. After the worker learns the job, the coach gradually withdraws from the work site except for occasional visits and/or telephone follow-up calls.

Job Coaches vs. Co-worker/Trainers

Supported employment models that depend on a job coach have enabled a large number of individuals with disabilities to experience community based employment (Kregel et al., in press). However, job coaches have limitations, some of which may be ameliorated by using co-workers as trainers and advocates (Nisbet & Hagner, 1988; Rusch & Minch, 1988; Shafer, 1986). First, there is a question of efficiency. Every time a worker is placed in a new job, the coach must learn the job. In contrast, co-workers already know the job. Second, as newcomers, job-coaches may be in a weaker position than co-workers to give disabled workers social entrees. Further, since disabled workers interact primarily with their coaches during work time, opportunity for interaction with nondisabled co-workers may be limited to breaks and lunch.

Third, as outsiders, the job coaches' presence may cause co-workers to alter their normal work routines and interaction patterns. If that occurs, the patterns learned by a disabled co-worker during training may differ from the patterns that emerge after the coach leaves. This problem is less likely with co-worker/trainers. Fourth, our research (McConaughy, Curl, & Salzberg, 1987) indicates that many employers would rather train new workers themselves. A co-worker/trainer is clearly preferable for their businesses. Fifth, disabled workers may become dependent on the job coach and fading the presence of the job coach is difficult and time-consuming (Nisbet & Hagner, 1988; French & Bell, 1984). Problems of dependency are more likely with job coaches than with co-worker/trainers because job coaches devote all their attention to the disabled worker. In contrast, co-worker/trainers have job responsibilities apart from training, and thus are more likely to be available when needed and busy when not needed.

Sixth, work settings are dynamic; co-workers turn over, managers leave, new equipment and procedures are introduced as businesses shift activities to meet changing demands of the market place. With these shifts, workers' responsibilities change, as do organizational structures and interaction patterns. Workers with severe disabilities often need help adapting to these changes, but when this support is needed, job coaches may long since moved on to other site(s). Co-workers can provide on-site assistance over long periods of time.

Some Issues in Co-worker/Trainer Models

It appears that co-worker/trainers can provide critical supports to workers with disabilities. However, there are challenging issues in developing a co-worker/trainer transition model. First, most co-workers do not automatically become trainers. They must be assigned those responsibilities, taught to perform those functions, and receive ongoing supervision and assistance to fulfill mentor, coach, and advocate roles. Further, as Nisbet & Hagner (1988) point out, monetary or other incentives may be needed to encourage co-workers to assume major responsibilities over a long period of time.

The remainder of this paper will describe ongoing research to develop a co-worker/trainer model. First, two studies will be summarized that provided knowledge about the ecology of common entry level jobs. Next, an experiment will be summarized that examined some basic procedures which co-workers might use to teach complex skills to workers with severe disabilities. From these studies and other research, a standard set of procedures were established that co-workers could use to teach jobs skills to workers with disabilities. These training procedures are described and then illustrated with additional research which examined their efficacy and explored procedures to teach co-worker/trainers how to apply them with workers with severe handicaps.

Ecological Studies

Previous research (Salzberg, Agran & Lignugaris/Kraft, 1986; Likens, Salzberg, Stowitschek, Lignugaris/Kraft, & Curl, in press) had suggested that there is a general set of skills which are important for success of entry level workers. In summary, to be successful, workers need to be responsible, proficient at their tasks, and have social skills to productively interact with others during work times. However, it seemed that, to design an effective co-worker/trainer model, more detailed information was needed about the training strategies that might be used for different jobs. Thus, two studies were designed which examined ecological features of entry level jobs. One study interviewed managers of restaurants and observed their physical ecology; the other study conducted detailed observations of the interactions between co-workers when new workers begin employment.

Study 1: An Examination of Ecological Features of Restaurant Employers. This study examined two jobs, dishwashers and food preparers, and identified features that are important in training new workers. Structured interviews were conducted with the managers of 20 randomly selected restaurants and further, each restaurant was observed by the research staff. Information was collected regarding: (a) staffing patterns; (b) how new workers are trained; (c) the physical ecology of the work site; and finally, (d) the alternative training strategies that might be used to assist new workers with disabilities.

This study yielded a rich array of information pertinent to designing a co-worker training system. Some highlights are: (1) employers expect training for dishwashers and food preparers to be brief, typically within a few days; (2) many employers prefer to do their own training and would resist an outside trainer; (3) existing workers frequently help train new workers; (4) co-workers and supervisors use a variety of training tactics including modeling, giving instructions and feedback; (5) these tactics are usually employed informally as experienced workers show new workers the job and give pointers on an "as needed" basis; and, (6) there is enormous variability between employers of dishwashers and food preparers in training schedules, training systems, expectations for employees, and in the general atmosphere that might affect new employees (e.g., hectic vs. calm, friendly vs. hostile).

In conclusion, it seemed from this study that many, but not all, businesses, could use co-workers as trainers. However, it also seemed that when co-workers serve as trainers, they typically use an informal, unsystematic approach that would not be successful with individuals who have severe disabilities. Thus, it seemed that a co-worker/trainer model would require a skilled training specialist to teach co-worker/trainers how to effectively instruct new workers with disabilities.

Study 2: Interactions Between New Workers and Co-worker/Trainers During the Job Acclimation Process. This study examined the events that take place when a new worker begins a job, especially the interactions that take place when a new worker begins a job, especially the interactions that occur between new workers and their co-worker/trainers (C.T.'s) over the first two weeks of employment.

A challenge in this study was finding a suitable way to observe the interactions between workers. Typically, research staff would be used to observe events at the work site. However, these work sites were often so crowded and noisy that an observer would have to be within two feet of the participants to hear what was being said. Therefore, individuals referred to as "participant-observers' (P.O.'s) were recruited and trained to make reliable observations. After training, P.O.'s were placed on jobs as maids, food preparers, or dishwashers, where they worked for two hours each day, five days a week. These new employee P.O.'s wore small lapel microphones connected to miniature audio tape recorders in their pockets. Thus, interactions between the P.O. and other workers were automatically recorded. In addition, P.O.'s quietly noted other relevant events that might not otherwise be recorded, such as the need to get more materials, or that they were having a problem doing a task. These observations were quite unobtrusive and, in fact, were usually not noticeable at all.

Each day, the audio tapes were transcribed and events were coded into three categories--antecedent verbal stimuli, antecedent problem stimuli, and responses. **Antecedent verbal stimuli** included introductions, instructions or work-related information, criticism or compliments, requests for assistance or work-related information, and offering assistance. **Antecedent problem stimuli** were non-verbal events in which a P.O. responded to solve a work-related problem such as running out of materials, or needing to identify what task to do next. **Response(s)** were defined as a statement or an action by a P.O. in response to an antecedent verbal stimulus or to an antecedent problem stimulus. Responses included following instructions, asking for work-related information or clarification, offering to help, expressing a social amenity, and making work-related conversation.

This study yielded important information for the later development of a co-worker/trainer program. Intensive interaction occurred between new workers and their C.T.'s initially, leveled off after a few days, and then stabilized. The two most frequent types of events were antecedent verbal stimuli as C.T.'s gave and requested work-related information with approximately equal frequencies. However, there were some differences between jobs. After one or two days, dishwashers and maids requested information with slightly decreasing frequencies across sessions. Their continuing interactions focused on routinized tasks such as when to stop clearing tables and begin washing dishes, or where to obtain items such as room keys or vacuum cleaners, that are shared among workers. New food preparers, however, requested information from C.T.'s steadily or at an increasing rate over time. These requests reflected diverse activities, such as finding utensils, operating machinery and coordinating work tasks. P.O. requests for information remained higher across sessions for food preparers, and decreased fastest for maids.

This study yielded important information about how C.T.'s typically instruct new workers. These C.T.'s gave many instructions initially and they were often presented in long strings. For example, the first day on the job, dishwashers received an average of 193 instructions in a two-hour period. Within that, C.T.'s presented strings of six or more instructions on ten occasions. Similar findings were discovered for motel maids. In contrast, food preparers received half the number of instructions on their first day of work, and two strings of six or more instructions were given at one time. These findings suggest that, without training, C.T.'s may present long, complex instructions to new workers which are beyond the response capabilities of many workers with disabilities.

Another pertinent finding was that instructions given to dishwashers and maids declined to 18 and 7, respectively, by the fifth session on the job. However, the number of instructions given to food preparers the fifth session remained fairly high (50 for two hours). This suggests that the food preparer job is more socially interactive than the dishwasher and maid jobs. Further, it suggests that C.T.'s may be better positioned to monitor and assist workers in a food preparation job than in a dishwasher or maid job.

Finally, it is worth noting that the continuing rate of instructions and problem situations stabilized at a high rate for food preparers relative to dishwashers and maids. This suggests that food preparers must be able to respond to new instructions and address problem situations daily. Thus, workers in food preparer jobs must be taught how to respond to novel instructions and problem situations, or they will need long-term daily support at work sites.

A Study of Co-worker Implemented Training Procedures for Workers with Developmental Disabilities

While the practical advantages of using C.T.'s seemed clear, research had not delineated specific training procedures that C.T.'s might use. In this study (Likens et al., in press), trainees were three 24 to 32-year-old women with full-scale IQs of 54 to 67 who had been in a sheltered workshop from 2 to 25 years. The C.T.'s were nondisabled individuals who had worked part-time in restaurants on campus, but who had no prior experience with individuals with mental retardation. These C.T.'s, like other workers in the restaurant, had specific tasks to complete apart from training, worked part-time, were university students, received instructions and some supervision from the restaurant manager, and received compensation slightly above the prevailing minimum wage. However, they were employed by the research project, not by the restaurant.

This study took place in a university-operated restaurant. The task to be learned by trainees was preparation of a 19-step chef salad. Daily data were collected on the accuracy of trainees' performance and the time required to prepare the salad. These measures were taken during a daily probe in which trainees received no help of feedback from their C.T.'s.

During training sessions, the C.T. and trainee worked side by side; the C.T. prepared simple lettuce salads while the trainee prepared chef salads. On the first day of baseline, C.T.'s demonstrated and described each step in making the chef salad. After the demonstration, C.T.'s left the completed salad as a model and worked on their own task. When the trainee completed her salad, the C.T. praised the steps performed correctly and suggested how to improve incorrect steps. For each succeeding baseline session, C.T.'s gave trainees a model salad and then worked on their task. Following completion of the chef salad, C.T.'s provided feedback on the trainee's performance.

In the first training condition, C.T.'s praised correctly performed steps and trained incorrectly performed steps. Training tactics included verbal instructions, models, practicing the step, and providing corrective feedback and praise as appropriate. Trainees learned to make the chef salad, but progress was slow. Consequently, a second intervention was begun in which trainees were taught to do a quality-control check for each step of the salad. This quality-control checking appeared to improve the rate of learning. However, a second study was needed for verification.

The second study used an alternating treatments design to compare the training procedure with and without the quality-control checking component. The results are presented below (see Figure 1).

Insert Figure 1 About Here

During baseline, performance of all trainees stabilized at a low level. In the second condition, the basic training procedure was used for half of the salad steps, and the same procedure plus the quality-control checking component was used for the other half. In every case, trainees learned faster and reached a higher plateau with the quality control checking component. In the third condition, all steps were trained with the quality-control checking component and performance accuracy rapidly increased to 90-100%.

This study provided a foundation for a co-worker/trainer model. First, simple teaching tactics such as verbal instructions, modeling, practice and feedback enabled workers with mild and moderate retardation to learn a complex task, preparing a 19-step chef salad.

Second, the quality-control checking made training more effective and efficient which, given employers' preference for short training periods, is of practical significance. Third, C.T.'s readily learned these procedures and were able to carry them out with only temporary, minor reductions in their own work output.

These studies provided a base for a C.T. mode. However, serious limitations remained. One was that, in these studies, the C.T.'s were college students. In contrast, many restaurant workers have not even completed high school. Typical workers might not learn the training procedures as readily or as well as C.T.'s in these studies. Further, in these studies, C.T.'s were trained by a doctoral level professional using an individualized tutorial process. However, the successful operation of a C.T. model would require standardized training for C.T.'s which could be carried out by typical employment specialists. Finally, these studies were limited to six workers with mental retardation, three C.T.'s for one task, and one type of job in a university restaurant. Systematic replication was needed to explore the applicability of the findings to other trainees and jobs.

Continuing Research

Continuing research was directed toward two goals: (1) to establish a standard set of procedures which C.T.'s could use to train job tasks to workers with disabilities; and, (2) to identify how to train C.T.'s and discover what continuing guidance they would need.

A Standard Co-Worker/Trainer Curriculum. Continuing research led to the development of a set of training procedures (see Figure 2) which seemed to have broad applicability across jobs and trainees. This set consists of a basic teaching sequence used by trainers to teach new job tasks plus five supplementary procedures to improve performance, consistency, and rate of work.

Insert Figure 2 About Here

The basic training sequence was derived in part from the Likens et al. (in press) study described earlier. The key to its successful application is that C.T.'s must integrate the tactics as they use them. That is, C.T.'s should give verbal instruction along with models, then observe and evaluate trainee performance, and coach as appropriate. Prior to training, C.T.'s commonly present long strings of instructions and explanations without models or practice. They also frequently model a job task (e.g., loading and running a dishwasher) but then fail to watch the trainee work and provide coaching. Further, it became clear that, even when trainees initially learned a job task, there were often deficits remaining, including slow rates of work, inconsistent performance, inaccuracies on particular components of tasks, and difficulty remembering task sequences. The supplementary procedures described in Figure 2 were developed to address these deficits. The 1-minute reminder was always applied first. Then other procedures were added as needed. The last four supplementary procedures were always applied in combination with the 1-minute reminder, but never simultaneously with each other.

Applying the co-worker/trainer model. One application of the co-worker/trainer model is illustrated below with two workers who have moderate and severe mental retardation (I.Q.s from 23-46) and limited speech who were placed in two restaurants as food preparers. The C.T.'s were 1 man and 1 woman, 19 and 26 years old, who had been at their jobs for at least 18 months. Both were high school graduates; one had completed one year of college. The workers' tasks included preparing salads and washing dishes.

Figure 3 below reflects the training behavior of the 2 C.T.'s and the work performance of their trainees. The top two graphs display the percentage of steps of the basic teaching sequence that C.T.'s performed correctly. Correct performance required that C.T.'s observe and evaluate their trainee's performance, provide appropriate feedback, and coach for errors. Correct coaching required instruction, modeling, practice, and feedback. During baseline, before C.T.'s received training, they never performed the teaching sequence correctly. They did use various tactics, including instructions, models, and feedback. However, these tactics were not integrated in the prescribed sequence. To standardize training for C.T.'s, a written and video curriculum was developed in which the training procedures summarized in Figure 2 were presented and illustrated (Curl, McConaughy, Pawley, & Salzberg, 1987). In the first intervention, C.T.'s studied the manual and watched the videotape. In each lesson, they had to respond to questions about the critical aspects of each training procedure. The pertinent material was reviewed as needed and C.T.'s were retested before proceeding to the next lesson. It may be seen in Figure 3 that studying the manual and the videotape did not improve the C.T.s' use of the prescribed teaching sequence. On the first day of the final condition, C.T.'s were exposed to a brief (15-minute) training session prior to their scheduled work day in which training procedures were role played and C.T.'s practiced giving concise instructions using scripts provided in the manual. Each C.T. also received one retraining session later in the condition. These pre-work rehearsals resulted in dramatic improvement in C.T.s' ability to apply the teaching sequence. The bottom two graphs in

Figure 3 display the percentage of job task steps performed correctly by Trainees 1 and 2. During the baseline, the performance of Trainee 1 and 2 ranged from approximately 58-80%. When C.T. 1 and 2 studied the manual and videotape. there was no improvement in the performance of their trainees. When C.T. 1 and 2's use of the training sequence improved in the third condition, their trainees' performance of job tasks also improved.

Insert Figure 3 About Here

This study affirmed the effectiveness of the basic training sequence with severely disabled workers who were not otherwise learning to adequately perform required job tasks. Further, it verified that, without training, co-workers do not effectively teach job tasks to workers with severe disabilities. It was also evident that, while the written manual and videotape were important training tools, they were not sufficient. However, with brief (15-minute) pre-work rehearsals, C.T.'s readily learned to apply the basic training sequence.

While the basic training sequence enabled workers with severe disabilities to learn job tasks, deficits in rate consistency remained. Two supplementary procedures designed for these problems are illustrated below. Figure 4 describes Jan's (a laundry worker with mild mental retardation) accuracy and speed sorting clothes and linens into ten categories based on type of garment, color, material, and type of soil. Jan's C.T. was an experienced worker who had never trained another worker before. During baseline, the C.T. used instructions, models and coaching tactics, but her use of these tactics was uncoordinated and unsystematic. Jan's performance during baseline averaged about 70% correct but varied from day to day. Further, Jan's speed was very slow.

Consequently, the employment specialist asked the co-worker to teach Jan to use a timer. With the timer, Jan's speed improved dramatically, along with her accuracy. However, Jan's performance was still inconsistent from day to day. Thus, the C.T. was advised to use a bonus/warning procedure in which Jan earned or lost an extra 50 cents a day, depending upon her accuracy and speed over several days. This procedure further improved accuracy and speed and both remained consistent thereafter, even after the bonus/warning process was ended.

Insert Figure 4 About Here

Figure 5 presents data for Pam (another trainee with mild mental retardation) who had not previously been successful in community employment. This case is particularly notable because the C.T. was the worker (Jan) in the previous example. Although Jan had only recently learned her job, her performance was quite adequate. Thus, she was asked to be a C.T. for a new employee. It is notable that Jan's use of the basic teaching sequence during baseline was excellent. An observer noted that her instructions sounded like the script her C.T. had followed when she was trained. The accuracy of Pam's work improved to an exemplary level during baseline and maintained during the following non-training phase. However, Pam's speed was slow compared to other non-handicapped workers. Therefore, the employment specialist suggested that Jan use one-minute reminders to help focus on speed and also teach Pam to use a timer. The one-minute reminder and timer improved Pam's speed to a very acceptable level, where it maintained.

Insert Figure 5 About Here

As of this writing, many individuals with disabilities ranging from severe retardation to mild learning disabilities and from ages 16 through 50 have been placed in community jobs using the C.T. model. It is premature to present an analysis of employment outcomes at this time. However, most workers are successfully employed and earning wages that average over $4.00 an hour. Many have advanced from entry levels to positions with greater responsibility and compensation. The remainder of this paper will discuss issues related to the C.T. use of models for supported employment.

Discussion

This discussion is in four parts: (1) training tactics to help workers with disabilities learn job tasks; (2) preparing co-worker/trainers; (3) role of the employment specialist in the C.T. model; and, (4) the employer's perspective.

Co-worker implemented training tactics. An effective model requires co-workers to have training tactics at their disposal that are simple, reasonably few in number, normatively appropriate for a community business, and sufficiently powerful to assist workers who have serious difficulty learning.

In our research, the basic training sequence (tell, show, tell, watch, and coach) allowed workers with severe and mild disabilities to learn complex tasks. Moreover, with the five supplementary procedures, workers reached proficiency and consistency levels comparable to workers without handicaps. Further, these training tactics were selected to fit comfortably in community businesses. For example, one-minute reminders are quick and easy to do at the beginning of the work day. Picture checklists allow workers who could not otherwise remember long task sequences to perform independently. Likewise, wrist or belt timers are small and unobtrusive, but enable workers to monitor and improve their work rates. Similarly, warnings are a common business practice. Adding bonuses was acceptable to employers, and helped workers achieve essential consistency. In summary, these training procedures are readily learned by co-worker/trainers, practical, effective, and fit the protocols of most community businesses.

Preparing co-worker/trainers. Co-workers often help new workers learn jobs. However, without training, they are typically informal and unsystematic. Untrained co-workers often give long strings of complex instructions which are far beyond the response capability of new workers with severe handicaps. Workers with disabilities in our research did not adequately learn job tasks until an employment specialist trained the C.T. However, with a systematic written and video curriculum (Curl, McConaughy, Pawley, & Salzberg, 1987) and brief (15-minute) pre-work rehearsals, C.T.'s readily learned to provide effective training. Scripts in the written manual became models for giving clear, concise instructions and C.T.'s rapidly learned to adapt them to their own work sites. It is encouraging that mildly handicapped workers who were initially trainees readily learned to be C.T.'s when they were later given the opportunity. Perhaps individuals who receive systematic instruction are more likely to become systematic trainers. If so, C.T. models may become progressively more efficient as more workers become trainers.

One important current limitation is that, even after learning training tactics, C.T.'s remained dependent on the employment specialist to diagnose problems and prescribe supplementary procedures. It is possible that this limitation will be ameliorated as C.T.'s acquire more experience. Alternately, perhaps additional training specifically designed to teach co-workers to make the discriminations needed to select supplementary training procedures, would solve the problem. However, this issue remains to be addressed in future research.

The role of employment specialists. The use of co-workers as trainers does not obviate the need for employment specialists. First, someone needs to prepare C.T.'s who, in our research, are otherwise ineffectual trainers. Second, even after training, C.T.'s were dependent on the employment specialist to select supplementary procedures. Third, employment specialists are needed to find first jobs for workers with disabilities and to find additional jobs as workers seek more advanced positions or are laid off.

Employer's perceptions. Work supervisors were interviewed for every job placement. They were generally favorable toward the C.T. model and stated several reasons for that. First, they obtained good workers who would remain on the job for a long time. Many of these jobs were previously filled by workers who were unreliable. Second, they were pleased that training was on-site and under the control of their own employees. Further, they valued one of their workers becoming a skilled trainer. Most of these businesses continued to use the C.T. system for all their new workers. Finally, it appeared workers who became C.T.'s stayed on the job longer. While this informal observation needs verification, there are several reasons why it may be true. First, C.T.'s receive a monetary incentive for training another worker. Second, C.T.'s receive extra attention from the employment specialist and their own supervisor which they would not otherwise receive. Third, being a trainer seems to increase some workers' interest in their job and their satisfaction.

Finally, C.T.'s acquired skills that increase their potential to advance in their place of work.

Concluding Remarks

The current focus on employment is a natural extension of the normalization movement of more than 20 years ago (Wolfensberger, 1972). Employment is the cornerstone of community living. Income is essential for independence and respect as an adult in western society. Employment for individuals with long-term supports as needed is clearly preferable to unemployment. Job coaches or employment specialists are needed to assist workers with severe disabilities. The question is how best to use them. Job coaches have become the traditional on-the-job trainers. Our research suggests that more effective models for supported employment can be developed which take advantage of co-workers. When a job coach trains a worker, the outcome is an employed worker. But, when an employment specialist prepares a co-worker/trainer, the outcome is an employed worker and a co-worker who can help that worker retain his job and go on to train other new workers. We believe that a co-worker/trainer transition model does not decrease the need for employment specialists; rather, it changes their function and increases their efficiency and long-term impact.

Finally, it is important to note that supported employment programs operate within constraints imposed by society at large. Many supported employment models can, in themselves, improve quality of life for individuals with disabilities. However, supported employment models can more effectively improve quality of life if society more adequately addresses the larger problems of economic deprivation, broken homes, drug and alcohol problems, transportation systems, housing, medical care, and treatment of emotional problems that differentially affect individuals with disabilities. The state of the economy is an important context that will affect the growth of the supported employment movement. More than 20 years ago Farber (1968) noted that the people with disabilities are treated as a surplus population and serve as an employment buffer. When unemployment is low, disabled workers stand ready to take jobs that other people no longer want. However, when unemployment grows, disabled people are traditionally pushed out of these jobs. We are now in a period of low unemployment. That has undoubtedly helped to promote supported employment. However, if we are to avoid the "last hired, first fired" phenomenon when we face the next inevitable period of high unemployment, it is critical to take the next step. That is, that as more individuals with disabilities obtain entry-level employment, we must focus on helping them become more versatile employees who will be more highly valued and secure in their employment status (Salzberg, McConaughy, Lignugaris/Kraft, Agran & Stowitschek, 1987).

Assessment

Measurement of Social Behavior in Work Settings

Social Integration

If supported employment is to have a positive effect on the lives of persons with severe disabilities, it is critical that the services delivered are of high quality and that there be measurable outcomes that are important and socially valid (Sandow, Rhodes, Mank, Ramsing, & Lynch, in press; Schalock, Keith, Hoffman, & Karan, 1989). Workers with disabilities should receive the outcomes of wages, support and integration when in supported employment (Bellamy, Rhodes, Mank & Albin, 1988; Wehman & Moon, 1987). Perhaps the most important and the most elusive of those outcomes is social integration.

Integration in supported employment settings has been difficult and enigmatic to define and measure. Several definitions of integration have been suggested. Mank and Buckley (1989) have described it as "in its simplest and most elegant form as a degree of community presence and participation for persons with disabilities that is no different from that enjoyed by persons without a disability label" (pg. 320). In relation to employment, Mank and Buckley (1989) describe integration as "... adherence to regular and ordinary patterns of minute-to-minute and day-to-day working life" (pg. 320). Four different components of integration have been considered. These are physical integration, social integration, relationships, and social networks (Mank & Buckley, 1989).

Without physical integration there cannot be social integration. But mere physical presence in integrated settings does not necessarily constitute integration (Mank, 1989). Physical integration is a basic assumption and the basis for the Federal definition of integration in supported employment (Federal Register, 1984). Wehman (1988) defines integrated settings as "situations where nonhandicapped workers or members of the public at large predominate" (pg. 5).

Social integration has been defined as "regular access to interactions with individuals without identified handicaps and regular use of normal community resources..." (Will, 1984, pg. 2). Definitions of what a social interaction is include: a) an oral or visual interchange between two or more persons (Storey, & Knutson, 1989); b) those behaviors that directly influence the behavior of others (Combs, & Slabey, 1977); and, c) the behaviors of two or more individuals with respect to a common environment (Skinner, 1953).

Currently Federal regulations (Federal Register, August 14, 1987) are focused upon physical integration rather than social integration.

However, there is little information regarding how physical variables may influence social behaviors in employment settings (Chadsey-Rusch, 1988).

It has been theorized that social interaction progresses in stages (Trower, 1979). Relationships and friendships move from formality to intimacy, at each stage exchanging quite different information, making different inferences, and filtering potential friends before allowing deeper levels of intimacy to develop (Duck, 1977).

Social networks generally have been assessed by measuring the size, structure, functions, and adequacy of the network (Barrera, 1986; Heitzmann, & Kaplan, 1988). Presently there is little empirical understanding of how social interactions and social networks for people with severe disabilities form and how they effect the quality of life of those persons (Kennedy, Horner, & Newton, 1989; O'Conner, 1983).

But if supported employment is to be successful, it is important that social integration be documented (Storey, Sandow, & Rhodes, in press). As a recent national seminar on supported employment reported:

> The integration of individuals with severe disabilities into the work place is a key element in the supported employment effort.... measuring integration is not yet well-developed or well defined in the field. Thus, few concrete examples exist of measures of the performance of supported employment programs in furthering community integration objectives. (Berkeley Planning Associates, 1986, pp. 18-20).

As Meyers and Putnam (1988) have emphasized, if there is an absence of systematic evaluation data to monitor intervention efforts, social integration may continue to be dismissed as personal bias and the current dominant system of segregated services will remain predominant.

Review of Research Assessing Integration in Supported Employment

Social integration in supported employment settings has been assessed using direct observation procedures (Storey, & Horner, 1989; Storey, & Knutson, 1989; Storey, Rhodes, Sandow, Loewinger, & Petherbridge, 1989), clique analysis (Yan, Rhodes, Sandow, Storey, Petherbridge, & Loewinger, 1988), narrative recording (Chadsey-Rusch, 1989; Chadsey-Rusch, & Gonzalez, 1989; Chadsey-Rusch, Gonzalez, Tines, & Johnson, 1989), and questionnaires/surveys (McDonnell, Nofs, Hardman, & Chambless, 1989; Rusch, Hughes, & Johnson, in press; Rusch, Hughes, Johnson, & Minch, 1989; Schalock, McGaughey, & Kiernan, 1989; Shafer, Rice, Metzler, & Haring, 1989).

If supported employment is to be successful it will be necessary to enhance interactions and integration. For instance, Rusch et al. (1989) reported that only 34.5 percent of workers with severe/profound disabilities in Illinois had involvement with co-workers and that only 1 percent involved befriending and 7 percent advocating. In a related study, Rusch et al. (in press) found that supported employees in individual job placements and enclaves (more than two workers with disabilities) had more co-worker involvement than employees in mobile work crews. However, the employees with severe or profound disabilities had lower levels of associating with befriending than those with borderline, mild, or moderate disabilities. These data must be viewed with caution, however, because they are reported by job coaches and only indicated the occurrence or nonoccurence of co-worker involvement. There was no reliability assessment, no concurrent use of direct observation or other assessment procedures, and no indication of how often the co-worker involvement occurred.

Chadsey-Rusch (1989) used narrative recording procedures to compare the social interaction patterns of 10 high school students with severe disabilities in school and community-based vocational training experiences to those of 8 nondisabled workers described by Chadsey-Rusch and Gonzalez (1988). The results indicated that the students were involved in more interactions, interacted mainly with teachers (99% of interactions) and very little with peers with or without disabilities (1% of interactions). Chadsey-Rusch et al. (1989) studied the social interaction patterns of workers with mild disabilities and those without disabilities in seven competitive employment sites using the narrative recording procedures from Chadsey-Rusch and Gonzalez (1988) as well as a social network questionnaire, a debriefing questionnaire, and a work performance evaluation form. The results of this study indicate that there was no difference between the two groups concerning the rate of social interactions but that there was in the quality of the interactions, particularly with respect to non-work or non-task related interactions. There was no difference between the work performance evaluation of the two groups. The workers without disabilities were more likely to do things outside of work with the co-workers than the workers with disabilities.

McDonnell et al. (1989) used the six point behaviorally-anchored rating scale developed by the Berkeley Planning Associates (1986) to assess integration. They found the level of integration in supported employment sites in the state of Utah to be correlated with procedural components of individualized program planning, design of training programs, development of a formal marketing plan, formal services contracts, and specific job descriptions.

Storey and Knutson (1989) used direct observation procedures to compare the social interaction patterns of six workers with, and six workers without, disabilities. The workers were matched according to their having similar job responsibilities. They found that generally, the workers without disabilities tended to interact more with co-workers and customers while the workers with disabilities tended to interact more with their school or agency supervisor and that they received more instruction than did the workers without disabilities. Another difference observed in this study was that the workers without disabilities tended to spend more time in work and personal conversation than did the workers with disabilities.

Storey et al. (1989) used the observation system developed by Storey and Knutson (1989) to study the social interaction patterns of eight workers with and seven without severe disabilities in a enclave supported employment setting. The results of this study are consistent with those of Storey and Knutson (1989). The employees with disabilities tended to interact more with the enclave supervisors and their interactions involved more receiving of instruction and compliments than those of the employees without disabilities. The employees without disabilities tended to engage more in work and personal conversation with co-workers and they generally had interactions with a greater number of different people than the employees with disabilities. However, the interaction patterns varied widely for each of the individual employees with their being overlap between the interaction patterns of the two groups.

Yan et al. (1989) analyzed the social structure of an employment setting using a clique analysis of the social interaction data from Storey et al. (1989). It was found that when the detection level was set high, most employees without disabilities cliqued with each other while the employees with disabilities cliqued among themselves. At relatively lower detection levels, all (i.e., six) except two of the employees with disabilities joined the clique and no structural differences between the two groups was detected.

Storey and Horner (1989) used the observation system from Storey and Knutson (1989) to compare social interaction patterns across three different supported employment options (individual sites, enclaves, and work crews). They found that workers with severe disabilities in individual and enclave sites interacted more with persons without disabilities than workers in work crews. However, there was a wide variation in the amount of social interactions across the different individual and enclave sites. Some workers in both sites had frequent interactions with persons without disabilities and other workers rarely did.

Schalock et al. (1989) used survey questionnaires and found that 97.7% of the competitive employment sites and 89.7% of the supported employment sites indicated that there were opportunities to interact with nondisabled persons during breaks and lunch.

A survey of nondisabled co-workers attitudes towards employees with disabilities was conducted by Shafer et al. (1989). They found that over 72% of the workers indicated that they had contact at least once a day with a co-worker with disabilities but that the context of these interactions were primarily work related. A minority of the workers indicated that they interacted with the co-workers during breaks or after work.

Measurement Issues

Many different measurement systems may be utilized in assessing integration. These include direct observation (Kirmeyer, 1988), social perception (Morrison, & Bellack, 1981), conversational analysis (Nisbet, Zanella, & Miller, 1984), interactional assessment (McReynolds, 1979), sequential analysis (Bakeman, & Gottman, 1986), verbal and nonverbal characteristics (Aveno, 1989), clique analysis (Seidman, & Foster, 1978; Yan et al., 1988), social validation (Kazdin, 1977; Storey, & Horner, in press), personal preference (Moseley, 1988), and naturalistic approaches (Reis, 1983). However, not any one measurement system will by itself adequately assess social integration. It will be necessary to utilize multiple measures to more fully understand social interactions and integration (Voeltz, & Brennan, 1984).

There has been extensive debate over how best to assess social skills and social interactions (Bellack, 1979; Foster, & Ritchey, 1979; Michelson, Foster, & Ritchey, 1981; Trower, 1984). Some of the issues have been: 1) the proper unit of recording (molar versus molecular); 2) the proper focus of observation (person versus situation); and, 3) the origin of inadequate social performance (skills deficits versus other explanations for inadequate performance) (Bellack, 1983; Curran, Farrell, & Grunberger, 1984; Haring, & Breen, 1989). The first two issues are most germane to the purpose of this chapter.

It has been suggested that social behavior is hierarchically organized (Trower, 1979). At the lower, molecular level interactions comprise single elements and at the higher, molar level interactions are units or sequences comprised of displays or strings of elements (Argyle, 1969).

Molar assessment involves a broad spectrum assessment (Patterson, & Bank, 1986). This assessment has generally involved global ratings (Wessberg, Curran, Monti, Corriveau, Coyne, & Dziadosz, 1981). Advantages for molar assessment include the inclusion of others in the assessment and the social validity of the assessment (Wolfe, 1978). Molar assessment has been criticized because of the association with a trait-attribution model, subjectivity, and the amount of information provided or not provided (Curran et al., 1984).

In contrast, molecular assessment focuses upon discrete behaviors or descriptions of action-reaction sequences (Patterson, & Bank, 1986) and is generally accepted as being more objective than molar level assessment. It is also very precise in identifying particular deficits or problems. Criticism of molecular assessment has involved the simplicity of the system, problems with identifying molecular behaviors, and its failure to account for complex interactions among behaviors (Curran et al., 1984; McFall, 1982). These two approaches are not dichotomous and both have important roles to play in the assessment of integration in supported employment settings.

Conclusions

There currently is insufficient data on supported employment outcomes concerning integration. Most of the research involving social interaction patterns of adults with disabilities has taken place in segregated settings (Glascoe, & Levy, 1985; La Greca, Stone, & Bell, 1982; Lignugaris/Kraft, Rule, Salzberg, & Stowitschek, 1986; Lignugaris/Kraft, Salzberg, Stowitschek, & McConaughy, 1986) and involved interactions only with staff or other persons with disabilities (Kleitsch, Whitman, & Santos, 1983; Ralph, & Birnbrauer, 1986; Wheeler, & Wislocki, 1977). It is only recently that empirical research has been conducted to assess integration in supported employment settings. It is not clear what measurement system or systems will best provide the most accurate assessment of integration. We still have much to learn about integration in supported employment.

The Training of Social Behaviors

So far, supported employment programs have been primarily concerned with elevating the job task performance of the disabled worker so he meets the employer's criterion and is retained. Good programs have attempted to successfully embed the disabled worker into the social network of the workplace. Our data on these efforts is largely anecdotal and unsystematic.

Social Skills Training

The main approach to enhance social behaviors in the workplace has used some variant of social skills training. For example, Breen, Haring, Lee, & Gaylord-Ross (1985) applied a sufficient exemplar strategy (Stokes, & Baer, 1977) to induce social interactions between autistic youth and their nondisabled co-workers. Training consisted of role plays or behavioral rehearsals of a script of conversational interactions that were practiced between autistic and nondisabled students. The autistic youth successfully generalized these scripted routines from the role plays to actual interactions with co-workers. Interestingly, there was no critical number of exemplars (role play confederates) needed to induce generalization. One autistic youth generalized after rehearsal with one confederate. Two youths required rehearsal with two peers. A fourth participant needed rehearsal with three peers. Most importantly, the disabled youth approached were well received, and had appropriate interactions with their co-workers.

Self-monitoring is another treatment approach that may foster social interactions in work settings. For example, Storey and Gaylord-Ross (1987) increased positive and decreased negative verbalizations during a breaktime pool game at work. They used a combined treatment package of role play, model, positive reinforcement, and self-monitoring. Ultimately, self-monitoring alone maintained these behaviors. Yet, self-monitoring in the criterion setting does not represent completely successful generalization. When Storey and Gaylord-Ross discontinued self-monitoring the treatment gains regressed. Still self-monitoring may be viewed as a useful vocational prosthetic to induce job task (cf. Sowers, & Bourbeau, 1987).

Self-mediation is another technique to promote generalization (Stokes, & Baer, 1977). While self-mediation has been avidly embraced in the cognitive behavior modification efforts of clinical trials, it has been largely overlooked in work with developmentally disabled persons. Recently, Park and Gaylord-Ross (1989) have drawn on the "process" work of McFall (1982) to promote social interactions in vocational settings. They developed a treatment package which had mentally retarded youth:

a) decode a social situation.
b) generate alternative social behaviors for the situation.
c) decide or pick the best behavioral solution.
d) rehearse the behaviors with the instructor.
e) self-monitor their performance.

In a two-part experiment, three participants successfully generalized training to real social interactions with co-workers and customers. Social validity data was supportive in that co-workers viewed the participants to be more interactive on a number of conversational measures. In the second experiment, the effectiveness of cognitive process training was compared to purely behavioral rehearsal (role-play) training. In both cases the process approach produced significant generalization while the rehearsal procedure had negligible effects. Interpretation of relative treatment efficacy must be guarded because:

a) the process procedure included a rehearsal component.

b) the treatment order effect (process always followed role plays).

c) the role play only included one training exemplar person, which may not be a sufficient number to induce generalization with this treatment.

Yet, cognitive process approaches to social skill training offer real promise for disabled individuals. Future research may demonstrate their further potential in employment settings.

Relationship Interventions

Rather than focusing on discrete behaviors in social interactions, it may be possible to directly engender relationships between disabled and nondisabled co-workers. This would parallel "special friend" efforts in schools where friendships have been successfully formed (Kishi, 1987; Voeltz, 1982). In the workplace, a disabled worker could be intentionally "bonded" with one or more co-workers. This nondisabled co-worker/benefactor might provide: instruction, leisure exchanges, advocacy, and emotional support (cf. Shafer, 1986). Most importantly, the benefactor could mediate the integration of the disabled worker into the social network at the workplace.

There are essentially no studies reporting such relationship interventions. It must be remembered that the co-worker/advocate training Salzberg and Curel described above addressed the teaching of job tasks. Undoubtedly social relationships developed as a function of such training; yet its explicit purpose was to teach job tasks.

There is a study in progress which is evaluating the efficacy of relationship interventions. Park, Tappe, Johnson, Simon, Wozniak, and Gaylord-Ross (1990) have exposed mildly disabled youth to relationship and social skills interventions in work settings. Youth were referred to the project because of their relative isolation at the workplace. After baseline data was collected, five youth were exposed to co-worker advocate training. Here, a designated co-worker met for six weeks with a staff person in order to generate integration activities which could be carried out with the disabled employee. A wide range of activities, e.g., meeting co-workers at breaks, going bowling off-hours, were carried out with the youths. Yet, except for one case, there were few changes in the targeted behavioral measures of social interaction at the workplace. A process social skills training procedure was subsequently implemented. Modest increases in social interaction were observed with the youths. Behavior change was interpreted from an ecosocial perspective. That is, where the individuals had many opportunities with willing interactants, the social skills training program produced substantial results.

Finally, a systematic replication of the relationship programs was conducted with a more severely disabled, deaf-blind individual (Gaylord-Ross, Lee Johnston, & Goetz, 1989). Again, few behavior changes resulted from the co-worker advocate procedure. Rather, substantive gains followed from social skills training. Thus, it appears that relationship interventions lead to appealing integration activities, but at this point have not been detected in outcome measures. In contrast, the more familiar and validated social skills training procedure has continued to display utility in work settings.

Interestingly, a literature is emerging which examines the quality of work life and social support for developmentally disabled persons. Horner and his colleagues (Kennedy, 1989; LeBaron, 1988; Nemton, 1989) have reported that persons with severe disabilities receive much more social support than they give. This is understandable since they are supervised by caretakers at school, work, or home. Of interest, Park, Cameto, Tappe, and Gaylord-Ross (1990) extended these findings to mildly disabled persons. They found that nondisabled persons gave about as much social support as they received. The mildly disabled youth gave less support than they received; in a ratio of 4 to 5. This contrasted to the 1 to 2 ratio reported by the Horner group for severely disabled persons. Park et al. speculated that perhaps there is a continuum of giving support from severely, to mildly, to nondisabled persons. In this same study, Park et al. found that mild retarded young adults had a relatively good quality of work life, particularly with respect to the satisfactoriness of their job tasks. At the same time, they did not become more independent in making decisions in their life as they transition from school to adulthood.

Summary

This chapter began by pointing out that the considerations of generalization have created a rationale for community-based vocational training. That is, training in situ, at real work sites should advantageously promote the development of general work skills and facilitate their generalization to future employment sites. Interestingly, there has been little direct confirmation of this principle. Certainly, community training advances other key variables like: job development, parent expectations, vocational assessment, and socially valid goals. Yet, it is still not clear that in situ training leads to better generalization than simulated in-school training. Recently, McDonnell (1988) reported a superior effect of the former procedure in terms of trials to learn new tasks. Yet, this difference may not offset the costs sometimes accrued by lost instructional time moving students throughout the community (Horner, 1986). There is a clear need for aptitude by treatment interaction research to uncover who benefits most from community vocational training. There is some evidence (Close, 1983; Horner, 1986) that more severely disabled students require more proportionately community training to promote generalization. Conversely, mildly disabled students appear to benefit from a greater proportion of simulated versus *in situ* training.

In summary, vocational education has shown many recent advances in successfully placing disabled persons in nonsheltered employment. Although community-based training serves a number of functions, its efficacy has yet to be shown in terms of generalization to other and future work environments. For job tasks, it may be that a null hypothesis, "sequential programming" strategy (Stokes, & Baer, 1978) toward generalization, may have to be taken. That is, we should expect little transfer (or 'learning to learn set") to new tasks from previous job task training. Thus, each new job task must be taught anew, *in situ*.

In contrast, social behaviors and relationships have transpired throughout the persons life. It is likely that proclivities toward interactions and relationships may carry over from other experiences. Yet, we need to further demonstrate the utility of social skill and relationship formation interventions. There is a small but growing data base that social skills training is effective in work settings.

At present, it might be useful to interpret the social standing of a disabled employee from an ecosocial perspective. Figure 6 displays the four levels of social reality outlined by Park et al. (1989). The graphic is useful in defining such levels and suggesting corresponding interventions. For example, a macro-setting level defines global situational events like sheltered workshop, business office, etc. Different employment settings produce different work climates, and social rules. Macro interventions typically move an individual from one context to another, e.g., sheltered to nonsheltered settings. A second level of social reality identifies the social networks and relationships which may develop at work. Unfortunately, almost all of our work in this area has been anecdotal. A descriptive data base is emerging, though, which is characterizing the nature of social support and the quality of work life for disabled employees. Preliminary research on relationship interventions has not been promising. The most studied level of social reality has been with direct social interactions between individuals. A social skills training literature has been rich in other domains (Strain, & Odom, 1987), and is beginning to emerge in this difficult to control work setting. The intraindividual level of social reality offers possibilities for cognitive-behavioral interventions. While positive results have appeared with mildly disabled individuals, it is questionable whether persons with more severe disabilities are capable of mastering the process steps of this method.

As has been stated many times, social skills are very important at work for job performance and enjoyment. A technology is emerging to multiply measure social behavior in this challenging setting. A co-worker advocate approach to teaching job skills has received validation and interestingly parallels peer tutoring approaches in schools. Similarly, a social skills training technology is present which can better integrate the disabled employee in the workplace. We await further developments to enhance relationship and friendship formation at work.

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Figure Captions

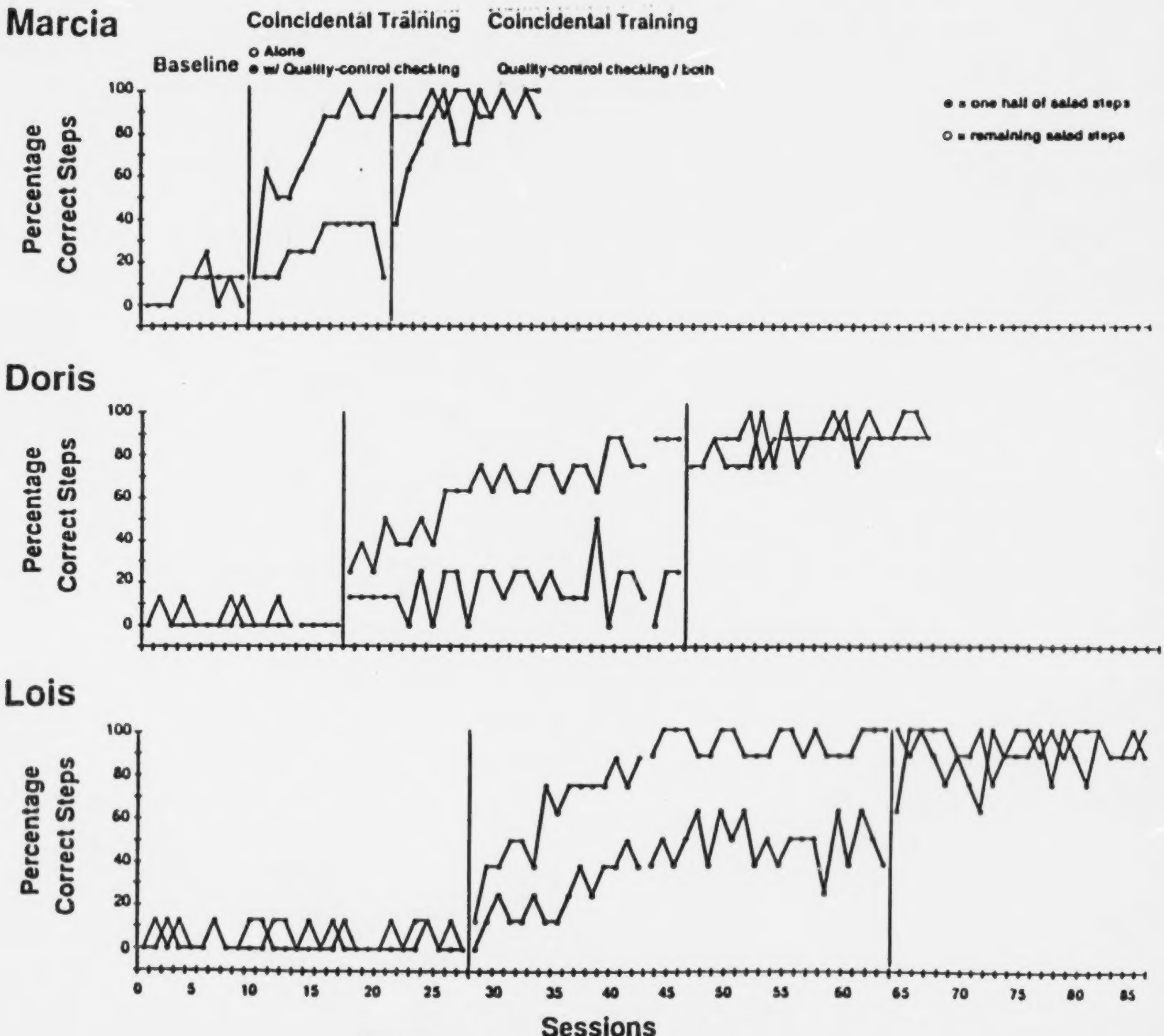
Figure 1. The use of an alternating treatments design to examine the effects of a job training procedure with and without a quality-control checking component.

Figure 2. A standard set of procedures with which co-workers/trainers can teach job tasks to workers with disabilities.

Figure 3. Use of the prescribed teaching sequence by two co-worker/trainers as they proceed through three experimental conditions (top two graphs) and the performance accuracy of their trainees (lower two graphs).

Figure 4. Jan's performance accuracy (top graph) and speed (bottom graph) sorting garments in a nursing home laundry across four training conditions.

Figure 5. Pam's performance accuracy (top graph) and speed (bottom graph) sorting garments in a nursing home across four training conditions.


Marcia
Baseline
Coincidental Training
○ Alone
● w/ Quality-control checking
Coincidental Training
Quality-control checking / both
● = one half of salad steps
○ = remaining salad steps
Percentage Correct Steps
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80
60
40
20
0
Doris
Percentage Correct Steps
100
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Sessions

The Basic Training Sequence: Instruct, model, observe, and coach

Give an instruction with a model, observe the trainee perform the task and coach as needed. To coach, praise correct responses and give feedback and practice for incorrect responses.

Supplementary Procedures

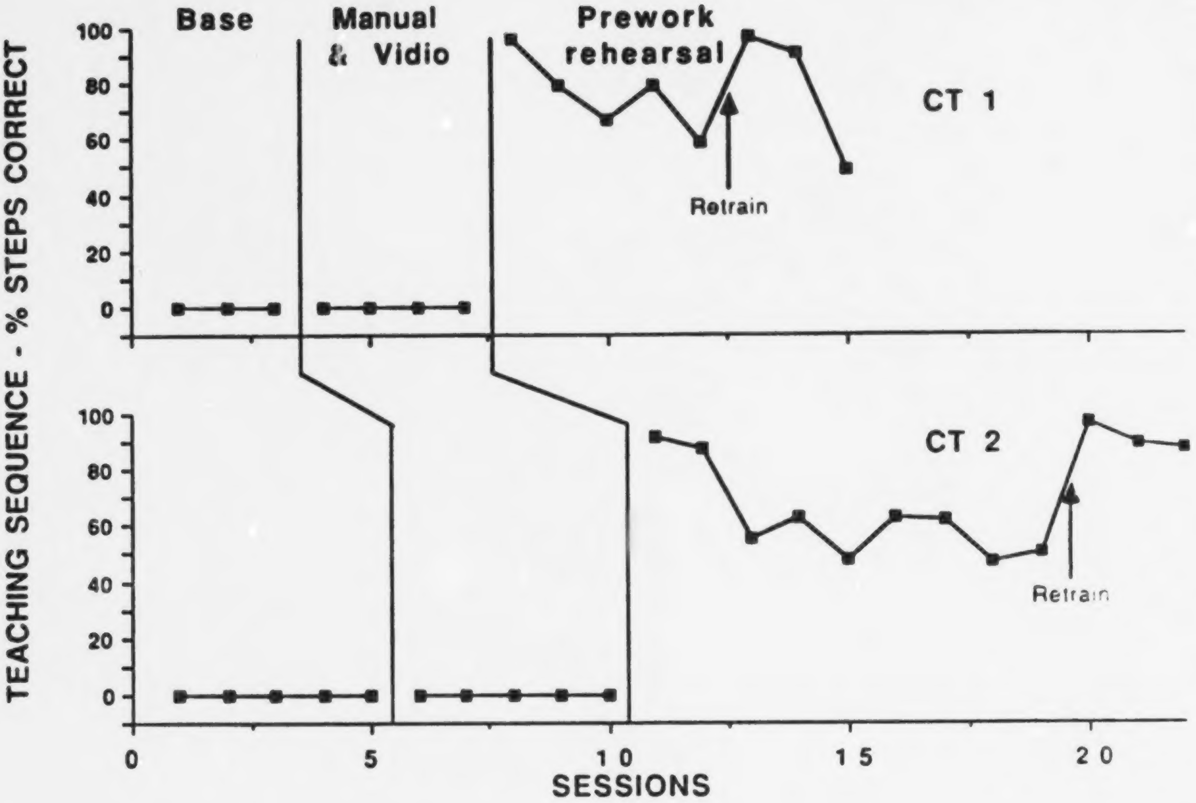
1. 1-minute reminder. Used to improve performance. Reminders are given at the beginning of the work day. C.T. succinctly tells worker the tasks he did well the previous day and the ones that he needs to improve. For example, "John, yesterday you did a great job on the beds, wastebaskets, and vacuuming. But today you need to do better getting spots off the mirrors and shining the bathtub and sink faucets."

2. Timer. Used to help trainees improve their rate of work. C.T. sets a timer to the criteria for the task. Worker tries to "beat the clock."

3. Picture checklist. Used if trainee cannot remember a sequence of required tasks or steps. C.T. prepares a picture sequence and teaches trainee to check off each task as it is completed.

4. Quality-control check. Used if trainee continues to make minor errors performing tasks or needs to sharpen accuracy. C.T. presents tasks with some components incorrect (e.g., bed corners not correctly tucked in). Trainee has to discriminate errors and correct them.

5. Bonus-warning. Used when trainee knows how to do tasks but does them inconsistently. C.T. first explains that worker will earn an extra 50 cents if his performance meets a certain specified level, but that he will lose 50 cents if it falls below another level. Further, if after a warning, trainee's performance continues below a specified level, he will not be allowed to work for one day.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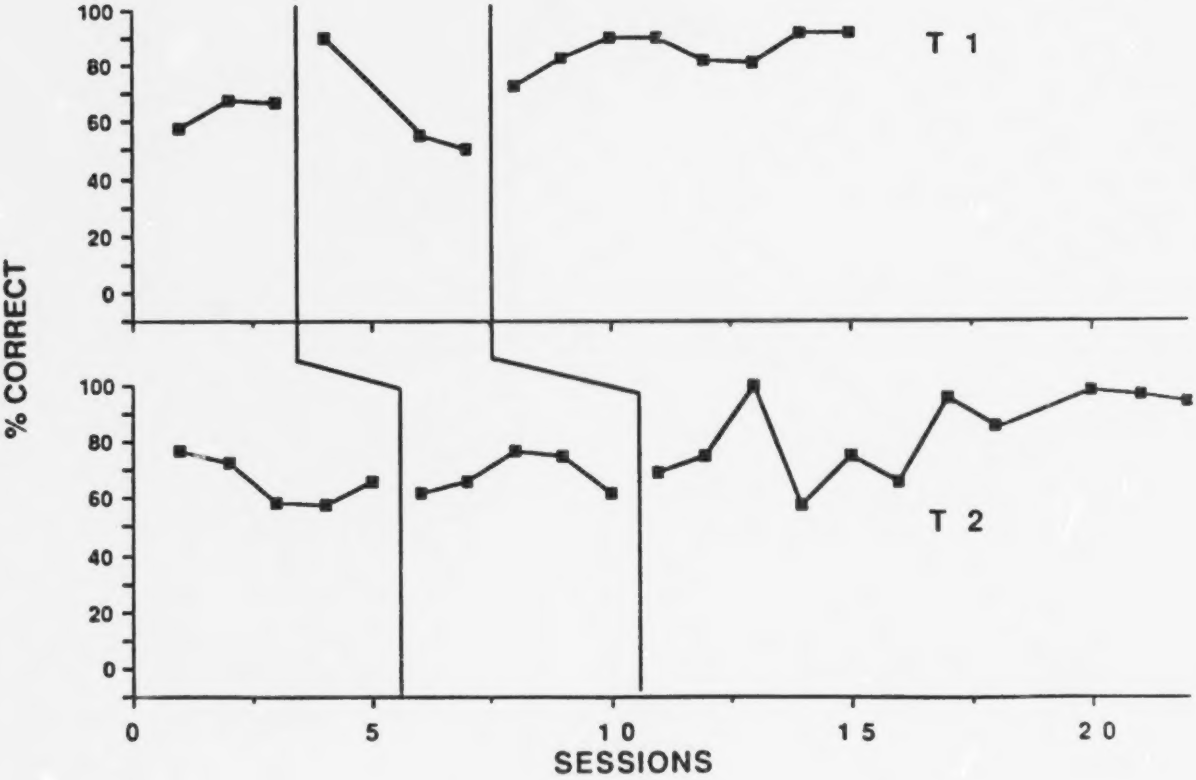
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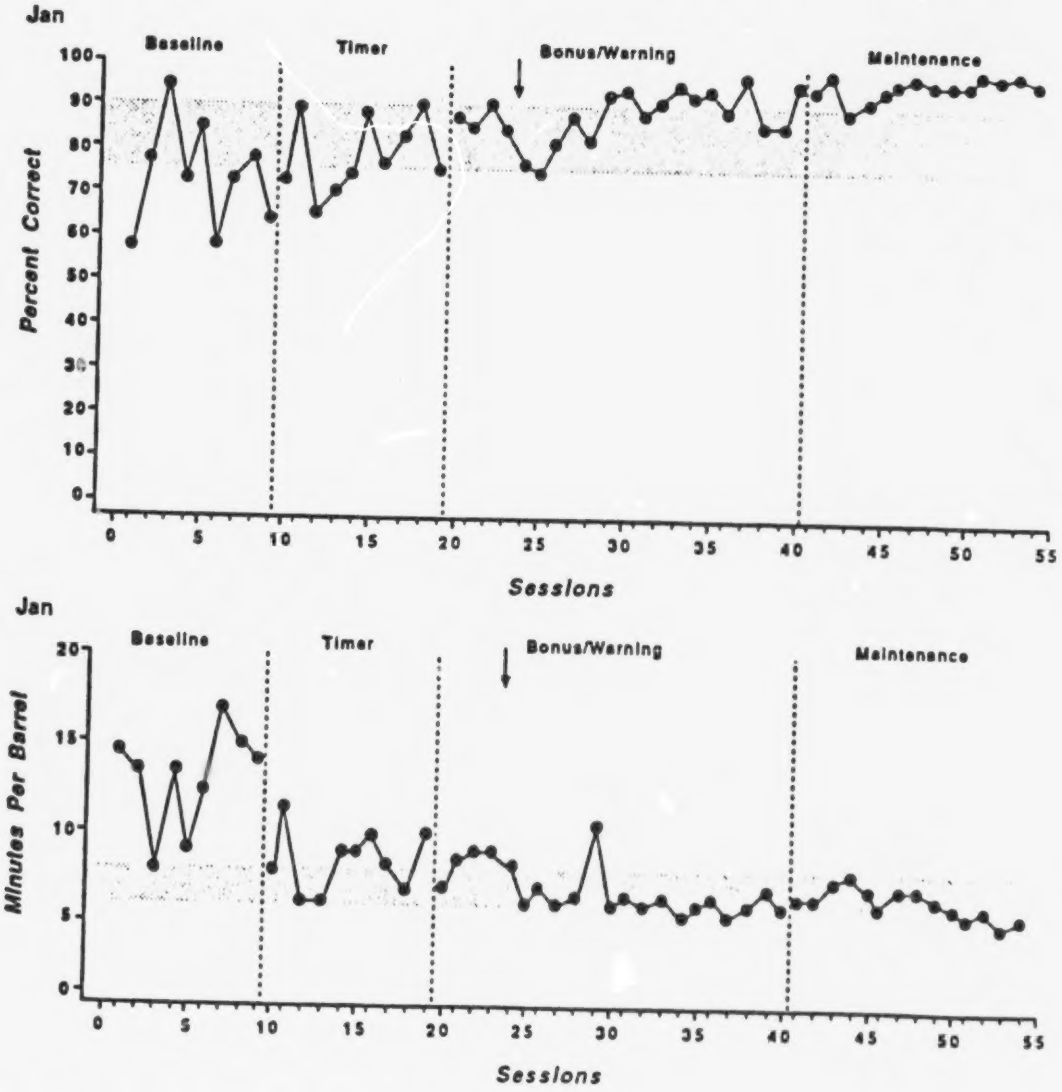
Jan
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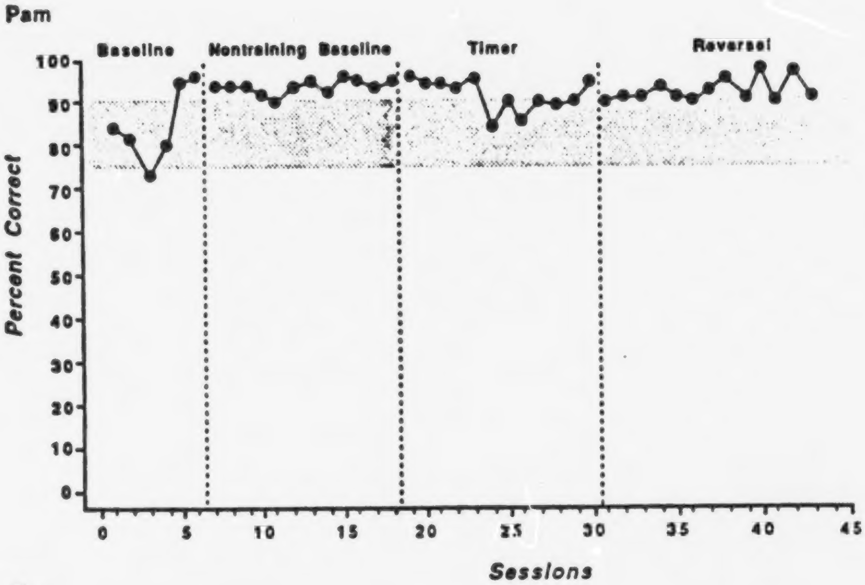
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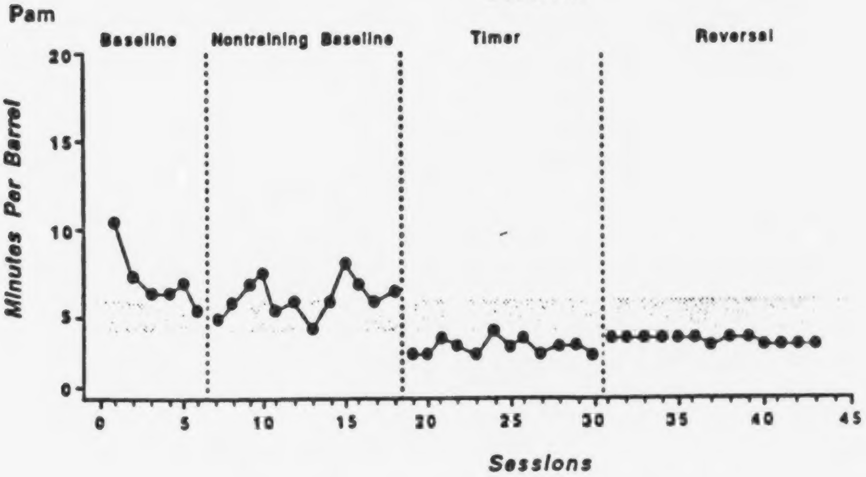
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Sessions

The Eclipse of Aversive Technology: A Triadic Approach to Assessment and Treatment*

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The Eclipse of Aversive Technology: A Triadic Approach to Assessment and Treatment

The aversive treatment of egregious behavior like self-injury represents an acute intersection of science and human values. Scientific research might demonstrate particular treatment effects. Yet, society's acceptance (value) of certain treatments will largely determine their usage or elimination. Striking images of a child hitting his face to the point of bruises, blindness, or bleeding, evokes a human response that this behavior must be curtailed. Yet, the sight of an adult shocking a child with a cattle prod evokes an equally strong response of censure. During the past 30 years the behavior modification field has developed a number of postures with respect to aversive treatment. Early on, it was assumed that aversive treatment was not appropriate for milder problem behaviors, since an emerging data base was showing that positive contingency management could reduce these behaviors (Favell, 1978). Soon, Lovaas and his colleagues (Lovaas & Simmons, 1969) were demonstrating that the most intractible cases of self-injury could be successfully treated with aversive stimuli like contigent electric shock. Although these findings were impressive, they also drew a humanistic response of disdain toward aversive procedures. Subsequently, in order to avoid the wanton use of aversives, professionals recommended a two-phase treatment model (Gaylord-Ross, 1982). In this approach a number of positive procedures were first attempted. If none of these successfully reduced the problem behavior, then, and only then would an aversive procedure be tried.

The two-phase model appeared plausible and was embraced by many practitioners. At the same time, though, there was a growing human rights movement that advocated for the outright banning of aversive procedures, particularly the most intrusive ones like contingent electric shock. Resulting legislation truncated the second part of the two-phase model. Such statutory controls often served the good purpose of curtailing bad practice or malpractices by professionals. In addition to limiting policies, the threat of a lawsuit greatly limited the use of severe aversive stimuli in residental and school settings. As a result, the data base on the effectiveness of aversives has been greatly attenuated. Therefore, the Axelrod and Apsche (1983) book serves as an important review of the effects of aversive conditioning. Since its publication, legal stricture and its fear thereof, has led to only a trickle of articles dealing with aversive procedures. This may be unfortunate, at least from a research perspective, since the volume reported relatively few negative side effects with aversives and a number of positive side effects (Newsom, Favell, & Rincover, 1983); and successful response suppression with extraneous stimuli, e.g., tastes and odors (Bailey, 1988). Although limited generalization effects were reported, it proved possible to sequentially program for these effects (Carr & Lovaas, 1988). Although a number of aversive procedures showed promise, the resulting de facto ban on the use of more severe aversives led to a marked diminution of reported studies of their use.

At the same time, a call came out to develop nonaversive technology. If the second phase of the two-phase model was to be restricted, then there better be a powerful positive program in place. Also, the belief emerged that all problem behaviors, no matter how serious, could be handled by nonaversive techniques. The last decade has thus witnessed an expanding body of literature demonstrating the effectiveness of nonaversive procedures. Perhaps the most exciting of these approaches has imputed a communicative intent to problem behaviors (Carr & Durrand, 1985). For example, a head banging behavior may be signalling the need for attention from others. When such behavioral causality was isolated, Durand and Carr taught a child appropriate communicative responses, e.g., signing for help, which led to assistance and the reduction (need) to head bang to gain attention. While such advances in nonaversive procedures have been striking, it still has not been determined whether such approaches can successfully handle all cases of problem behaviors; now or in the future.

The present chapter attempts to ask how far along we are in the potential eclipse of aversive technology. We will begin this question by showing our own clinical and educational practices during the past decade (Schrader & Levine, 1989). We will advance - the triadic model of the treatment of problem behaviors. The model emerged during the past decade of our practice. Interestingly, we began with a commitment to the two-phase model. Privately, though, we felt that aversive procedures would almost always be needed with the most difficult cases. During our extensive educational and clinical experiences, though, we found that the vast majority of cases could be successfully treated with a wide range of positive procedures. Thus, we were converted from cynics to advocates for the widespread use of nonaversives. The question of whether aversive technology may be completely eclipsed will be addressed in the last section.

The Treatment Triad

The Treatment Triad defines a set of procedures and teaching strategies which have evolved over many years of work with atypical populations. The first author, along with colleague Mark Levine (Schrader & Levine, 1989), have designed the Treatment Triad as a clinical decision-making tool around which to structure comprehensive treatment interventions. The model which we employ views behavioral programming with individuals manifesting challenging behaviors within a dynamic, skills-oriented framework. In order to be truly comprehensive in our change efforts, it is critical that we assess and program across all relevant environmental and behavioral dimensions. These dimensions, although interdependent, can be broken into their component parts for purposes of clinical decision-making and the design of prescriptive treatment modules.

This section of our chapter focuses on the conceptual and pragmatic foundations of the Triadic Treatment Model with a particular emphasis upon the utility of the model in clinical practice. After a presentation of the basic components of the model and the types of interventions which the model prescribes, we will present two case illustrations which will explicate the design and implementation of triadic programming. Prior to this, however, it might be useful to briefly review the genesis of the model for it parallels the genesis of the authors as professional behavior analysts.

The Behavioral model boldly proclaimed that behavior was a function of its consequences. Change those consequences and you could alter any behavior, reduce any excess, develop any skill. Obviously, this led practitioners in the field to focus their assessment procedures on the discovery of the maintaining consequences for the behaviors in question and their treatment interventions on the alteration of dysfunctional behavior-consequence relationships. This "traditional" form of behavior analysis still remains the predominant view of many professionals both inside and outside the field of behavior analysis (Matson & DiLorenzo, 1984). A glance through the Journal of Applied Analysis for the years 1968 to 1985 reveals a preponderance of articles attesting to the efficacy of consequence-based change programs in the modification of such severe behavioral excesses as self-injurious behavior (Favell, McGimsey, & Jones, 1978), aggression (Foxx & Shapiro, 1978), chronic self-stimulation (Harris & Wolchik, 1979), and life threatening rumination (Tanner & Zeiler, 1975). Further, a recent review by authors of articles in the last 15 years which used "behavior/modification" in their title indicated that of a total of 7,284 articles, 2,133 employed the word "consequence" in their descriptor, while only 189 used the word "antecedent" to describe their content. As practitioners charged with designing programs to remediate severe behavioral excesses, we relied heavily on differential reinforcement techniques, positive reinforcement and its myriad variations, and punishment procedures, in our quest for effective and humane treatment programs. In the main, these techniques served and continue to serve us well.

In the last few years, a shift in program emphasis seems to have taken place. Approaches which attempt to study the stimulus control properties of the environment in triggering excess behavior (Horner & Billingsley, 1988) along with in-depth analyses of the *function* of aberrant behavior (Carr & Durand, 1985; Carr, 1988) have come to the fore. This "second generation" of applied behavior analysis (Meyer & Evans, 1986) has been driven by a number of factors, not the least of which has been the general opposition to the employment of aversives which so easily flow from an overreliance on consequence-based change programs. The development of procedural guidelines such as those promulgated by the Association for the Advancement of Behavior Therapy (Favell, Azrin, et al., 1982) and by The Association for Persons with Severe Handicaps (1981) which attempt to regulate the use of aversives, are but two examples of the trend toward less restrictive and more educative approaches to the modification of aberrant behavior in persons with disabilities.

As clinicians practicing in settings which attempt to manage individuals with challenging behaviors, the new emphasis in the field could not have come at a better time. Pressure to eliminate aversives, personal dissatisfaction with the results of programs based solely on the manipulation of artificial contingencies, and a growing feeling that the maintenance and generalization of treatment gains produced in highly controlled settings is problematic (Schrader & Levine, 1989), has led us to a personal evolution in our programming decisions. The Triadic Treatment Model represents our current thoughts on the design of comprehensive change strategies for individuals manifesting challenging behaviors in a wide variety of settings. We do not deny the need to engineer the environment in a manner which produces positive reinforcement for appropriate behavior nor do we relegate this effort to a secondary role. Rather, we choose to focus our interventions across an expanded universe of variables with a particular emphasis on the antecedent stimulus and setting events which set the stage for behaviors to occur and on the interpretation of excess behaviors as communicative in intent. What this means specifically should become clear as the model is explained and illustrated in the next few sections. Throughout, our thinking has been shaped by the work of R. Wahler and P. Touchette in the area of stimulus control and antecedent management; T. Carr, M. Durand , A. Donnellan in the area of communicative functions of behavior; and by J. Favell, L. Meyer, and I. Evans in the area of functional equivalence and educative change strategies. We have tried to combine the work of these authors with our own clinical experience to develop a more comprehensive model of intervention. This model must address not only the ecology of the environment in which the individual functions, but also pay heed to the requirement that we develop new behaviors which are, in some way, functionally equivalent to the excess behaviors which we are attempting to modify.

ASSESSMENT

The efficacy of the Triadic Treatment Model rests firmly on the ability of the practitioner to assess the relevant dimensions of the target behavior that s/he wishes to modify. Without a thoroughgoing assessment, it is not possible to interpret the meaning or function of the target behavior for the individual, thereby increasing the likelihood of treatment error based upon selection of the wrong reinforcer, the wrong incompatible skill, or even the wrong target behavior. Once the appropriate assessment has been done, treatment decisions logically follow and it is with an eye toward this treatment that we form our assessment questions and frame our behavioral observations.

The general aim of the assessment is, of course, to obtain all relevant information that has a bearing on the performance and maintenance of the initially identified target behavior (Gaylord-Ross, 1982). Specifically, we are interested in gathering information in the following areas:

(a) antecedent stimulus and setting events observed/reported prior to target behavior onset;

(b) a risk analysis delineating situations in which the individual is most and least at risk for target behavior performance;

(c) an analysis of the maintaining consequences for the target behavior and for alternative behaviors, and in particular, the schedule on which each of these responses are maintained;

(d) a description of the total repertoire of the individual with emphasis upon relevant skill deficits, collateral behaviors, and relative strengths;

(e) an analysis of the function of the target behavior for the individual.

As the reader will readily discern, our assessment areas correspond to the information contained in the traditional functional analysis with two important differences. First, we place a much greater emphasis on discovering antecedent events occurring prior to or concurrent with the target behavior, and secondly, we attempt to gather information which will help us to interpret the "meaning" of the behavior for the individual. We have found that the desired information can best be secured through a combination of direct observation and mediator report based upon their responses to a variety of behavioral checklists or inventories.

Assessing Antecedents

Of all the areas of assessment, we have spent the most time designing methods to retrieve information on the stimulus and setting events involved in the performance of the target behavior. In our practice, we have found that this area is the most neglected of all the assessment domains. Answers to the question of what was going on just prior to the event or concurrent to the event are routinely met by a shrug of the shoulders and the cryptic response, "It just came out of the blue." Our assessment techniques in this area are designed to prompt mediators 'identification of antecedents by providing them with a structured format around which to evaluate the presence or absence of specific hypothesized antecedents. The device which was designed to obtain this information was dubbed the Risk Profile (Schrader & Levine, 1987) and represents an extension of the work of Paul Touchette with the scatter plot (Touchette, MacDonald, & Langer, 1985).

While the scatter plot asks responders to note the times that the behavior in question occurs (which is then plotted on a grid for visual inspection), the Risk Profile provides mediators with a list of over 100 potential antecedents and requires them to decide which of these antecedents seems to be correlated with the presence of the target behavior. Responses to the presented items are rated on a Never, Sometimes, Frequently scale and provide the clinician with a profile of those situations in which the individual is at greatest and least risk for engaging in the target behavior. We have employed the device both as a contemporaneous data collection instrument (i.e., completed at the time the behavior occurs), and as a clinical interview tool which asks respondents to recall the usual pattern of antecedents present when the behavior occurs. In our latest variation, we have combined the scatter plot with the Risk Profile to form a Risk plot which tracks a selected number of antecedents over time, thereby enabling the clinician to analyze patterns across both time and specific classes of antecedent. Table 1 presents examples of items from the Risk Profile.

Insert Table 1 about here

In addition to those assessment devices described above, we have employed two other tools to help in the discovery of antecedents. The first tool is the Setting Event Checklist (Gardner, 1987) which attempts to track distal antecedents or those events which may have occurred at a considerable time from the actual target behavior, but are nevertheless thought to contribute to the performance of the behavior under assessment. Examples of such events include disruptive behavior on the bus, a prior temper outburst, a change in the usual routine, and the presence of an organic syndrome such as a seizure or menstrual period. It has been our experience that these and other distant events can exert a profound effect upon behavior, and the lack of a contiguous time relationship can easily obscure the potency of these setting events in the eyes of mediators and clinicians alike (hence the familiar, "it came out of the blue").

A second tool which we have recently developed for use in the antecedent discovery process is called the Antecedent Assessment Scale (Schrader & Levine, 1989). This device consists of 20 questions concerning events which may be occurring at the time the target behavior is observed. The questions are answered on a 5 point frequency-based scale ranging from Never, to Almost, to Always, and are arranged to give the assessor a picture of the prevalence of five classes of antecedents: Ecological, Demand-Based, Interpersonal, Intrapersonal, and Event-Based. Table 2 presents the antecedent Assessment Scale. Knowledge of the relative strength of each of these classes of stimulus events can help the clinician to plan a more generalizable risk reduction program by planned modifications of stimulus classes rather than singular events.

Insert Table 2 about here

The tools enumerated above along with narrative records (when feasible) of antecedent-behavior chains can provide a significant amount of information on both stimulus and setting events known to be correlated with the target behavior. The discovery of these stimulus control relationships is critical to the design of a comprehensive treatment program and has for too long been relegated to a secondary position of importance. Our work to date has shown us that antecedent analysis and modification is an important tool in the armamentarium of the behavioral clinician and deserves ongoing study and debate.

Skills Assessment

As indicated, target behaviors cannot merely be eliminated; rather they must be replaced by another behavior. An important component of skills assessment is a determination of the degree to which an individual possesses an appropriate alternative behavior that can take the place of the undesirable target response. To the extent that alternative behaviors are absent or weak, training must be included in a comprehensive change program if our goal is lasting and generalizable change.

In practice, we have routinely performed skills assessments on the individual's functioning in the domains of: self-help skills; ability to self-regulate (i.e., self-monitor, self-evaluate, and self-reinforce), social skill performance, use of leisure time, ability to understand and comply with instructions, vocational capabilities, and ability to communicate. These assessments are performed through direct observation and mediator report and are designed to answer the question: if this particular target behavior were eliminated, what behavior(s) would take its place? If our assessment leads us to the conclusion that the individual does not possess an appropriate alternative behavior in his or her repertoire, then skills teaching is indicated and prescribed as a part of the comprehensive treatment program.

Of all the skill domains listed above, we have found communication skills to be the most critical. As is frequently reported, severely disabled individuals are invariably deficient in their ability to communicate basic needs, choose from alternative options, reject unwanted events or materials, and carry on rudimentary conversations. These deficits have a direct bearing upon their behaviors since if one takes the position that it is not possible, not to communicate, then these behaviors must have direct significance for the individual. In the assessment of communicative ability, we most often employ checklist assessments such as the Communication Interview (Schuler,1981) to guide our decision-making. The Communication Interview asks respondents to record how the individual expresses a variety of communicative functions such as requests for affection, desire for adult action, requests for food or other objects, protest, and declarations or comments. A choice of communicative behaviors ranging from crying to appropriate speech is provided from which the respondent can pick the individual's predominant form of expression. The subsequent function x behavior matrix that is formed gives the assesor a basic picture of the individual's communicative profile. Viewing excess behavior as conveying a communicative message leads directly to

interventions designed to remediate this deficit thereby providing the individual with alternative strategies for negotiating what s/he wants (Carr, 1988;
Donnellan, Mirenda, Mesaros, &Fassbinder, 1984).

The communicative function of a particular behavior becomes of paramount importance if one takes the approach that any singular behavior is, in all likelihood, part of a class of behaviors all of which have similar functions for the individual. In this manner, we can describe a class of behaviors which attempt to communicate a desire for attention, a rejection of a given task or instruction, or a deisre for more or less stimulation/ arousal (Donnellan et al., 1984). Employing this reasoning, it becomes relatively less important to know what the form of the behavior is (e.g., aggression, self-injurious behavior, tantrums), and correspondingly more important to assess what function this and other behaviors within the same class possess. In general, it falls to skill training programs to provide the individual with an appropriate form to meet the hypothesized function.

Assessing Consequences

The third area of assessment on which we focus a considerable amount of attention involves the environmental events which follow a given behavior and alter or maintain its occurrence. Much has been written on the analysis of consequences, for the most part, follows along traditional lines. However, adopting an approach which emphasizes the need to substitute appropriate and functionally equivalent alternative behaviors for the target behavior leads us to a greater investigation of the availability of, and the environmental response to, these alternative behaviors. In particular, we are interested in obtaining information on the effectiveness, efficiency, and reliability of both the target behavior and the alternative behavior (Favell & Reid, 1988). Data gathered on the ability of both behaviors to obtain reinforcement (effectiveness), the ease of performance of the behaviors (efficiency), and the schedule of reinforcment that the behaviors receive (reliability) are vital to the concept of functional equivalence and the subsequent change programs which are designed.

In practice, we are interested in obtaining information on the following questions:

(a) What events follow the target behavior?

(b) What events follow the alternative, functionally equivalent (if any) behaviors?

(c) How easy is it for each of these behaviors to be performed?

(d) What is the schedule of reinforcement that these behaviors receive?

(e) What is the latency of reinforcement between response and reinforcement?

(f) Considering all of the above, what might the target behavior be communicating?

We have been aided in our pursuit of the hypothesized communicative message by the employment of the Motivation Assessment Scale (Durand, 1988). This device asks respondents to answer 16 consequent-based questions along a 6 point frequency scale ranging from Never to Always. Answers are then grouped into 4 categories corresponding to the most common types of consequent events seen with a developmentally disabled population. These categories, Sensory, Escape, Attention, and Tangible reflect the fact that responses, although different in form, may have very similar functions. Grouping behavior by classes corresponding to their hypothesized function (e.g., attention-based or escape-based behaviors) has permitted us to find functionally equivalent behaviors, within that response class, that are appropriate . Through differential reinforcement procedures we can then increase the likelihood that they, rather than the target behavior, will occur when environmental conditions dictate. If there is no appropriate, functionally equivalent behavior to be found within that response class, then instructional training programs can be instituted to provide the individual with additional options for communicating his intent.

Summarizing our assessment procedures, our primary goal in assessment is to delineate the events which exert stimulus control over the behaviors in question and the variables which maintain these responses and the more appropriate responses in the individual's repertoire.

Considerable attention is paid to the triggering events in the environment with the belief that a careful explication of these events can help us to arrange an environment which puts the individual at less risk for behaving in an aberrant fashion. Our assessments are also characterized by an interest not only in the form of the target behavior but of the function of this behavior as well. The doctrine of functional equivalence suggests that to the extent that an appropriate alternative behavior can be found or taught which provides the individual with the same function and reinforcement as the target behavior, then more lasting and generalizable change will occur. Assessment procedures geared to obtaining information on equivalency issues are the first step in the creation of this more durable change.

Components of the Treatment Triad

As indicated above, the Treatment Triad is a comprehensive decision-making guide to behavior change programming. The intervention proper is divided into three components which, while interdependent, represent different procedural approaches to changing target behaviors. The triadic model, in its entirety, is presented in Figure 9. As the figure illustrates, the model provides for three broad categories of intervention, Antecedent Changes, Curricular Intercessions, and Contingency-Based Interventions. Once the assessment or functional analysis is completed, information will be available which has direct application for each component of the model. While some problems will lend themselves more readily to one class of procedural options than to others, in general, we have found that all individuals can benefit from programming carried on across all of the intervention domains. What follows is a brief discussion of each of the components of the model with relevant examples taken from actual clinical practice.

Insert Figure 1 about here

Ecological/Antecedent Changes

This category involves rearrangements to the environment that are designed to circumvent or prevent aberrant behavior from occurring (Meyer & Evans, 1986). During assessment , we have obtained information on high and low risk situations for the individual. A high risk situation is one in which the target behavior has a history of occurring , leading to a greater than average probability of future recurrence. Correspondingly, a low risk situation is one in which the target behavior rarely if ever occurs. While the distinction between these two extremes can, on occasion, become blurred, there usually is agreement between mediators as to what constitutes both a high and a low risk event.

Once we have discovered the "risk profile" for the individual, we are able to begin to generate what we have referred to as risk reduction strategies. Broadly speaking, there are but two generic risk reduction procedures: decreasing time spent in high risk situations while increasing time spend in low risk situations; and changing the character of the high risk event so that it no longer triggers aberrant behavior. The first strategy as been referred to as creating a zero baseline (Touchette,1988). Simply put, it involves eliminating as many of the triggering stimuli as are known in order to produce an environment which is as "errorless" as possible. In practice, this usually means the removal of most if not all demands (for a demand-based or escape responder), the provision of 1:1 attention (for the attention-based responder), and the availability of virtually unlimited tangible items (for the tangible responder). In short, the environment is manipulated until the behavior reaches a zero or near zero level.

This form of intervention can be quite critical at the beginning of treatment. In view of the fact that, in many cases , mediators are discouraged by their ability to modify the behavior or by the failure of previous change programs to affect the desired outcome, a demonstration that the behavior can, indeed, come under environmental control can be extremely rejuvenating for staff. In some cases, treatment can terminate at this point. If the changes made on the environment can be maintained without undo disruption to educational progress, then the zero baseline program may be sufficient. In the majority of cases, however, risk factors must be introduced back into the environment . This necessitates the design of programs which modify the characteristics of the high risk situation so that it no longer engenders aberrant responding.

Antecedent modification has not been given the kind of research attention which has been paid to consequence alteration. In fact, most published articles fail to even mention the results of a functional analysis or the types of triggering events which were correlated with the target behavior. Our own work in the area of risk reduction has led us to conclude that there are a variety of interventions which can successfully modify high risk situations to the point where the individual is no longer at risk for aberrant behavior. We have categorized our interventions into the following procedural techniques:

1. *Environmental enrichment.* Enrichment refers to the provision of a wide range of activities and materials which create a

stimulating and reinforcing environment. As Horner (1980) clearly demonstrated, the availabilty of a variety of recreational materials along with training in the use of these materials can be a dramatically effective means of reducing aberrant behaviors. For clinical purposes, we have defined an enriched environment as one which provides: availability of, and reinforcement for, interacting with materials and activities; opportunity and reinforcement for the use of language and other forms of communication; a high interest curriculum; novelty in available stimuli; frequent reinforcement for adaptive behaviors; opportunities for structured and incidental social interaction; an adequate amount of personal space; choices within a predictable schedule; and the opportunity for community participation. It is our experience that unless these components are present in the environment of the targeted individual, formal behavioral change programs will fail to create meaningful change.

2. *Stimulus change* . This procedure , when employed within an antecedent change framework, involves the unpredictable or unplanned change of stimulus conditions within the environment (LaVigna & Donnellan, 1986). As a risk reduction strategy, it relies upon the novelty of the of the new stimulus configurations to change established responses. Examples of stimulus change procedures include: changing seat arrangements within a classroom, changing furniture arrangements within a group home, having staff wear unusual or silly clothing, and changing the path of a community walk. In a particularly simple application of this

technique, the author modified the encopretic behavior of a developmentally disabled man by merely moving a piece of furniture to the spot where the individual typically eliminated. On the whole, stimulus change procedures are useful for temporarily disrupting the indivduals's typical pattern of responding and giving the professional time to design a more comprehensive plan.

3. *Stimulus Fading.* Stimulus fading involves an alteration in some dimension of the triggering stimulus. In the typical stimulus fading paradigm, the stimulus is altered to the point where responding is at zero or near zero rates (via elimination or substantial modification), a phase which is then followed by a gradual return to the stimuli's original state (Iwata,1987). If the shaping procedure has been performed carefully enough, then responding should remain at low levels provided that the motivation for escape behavior is lessened or eliminated as well. Stimulus fading can occur across activities (Touchette et al., 1985), task demands (Heidorn & Jensen, 1984), behavior reduction procedures (Pace, Iwata, Edwards, and McCosh, 1986) and staff (Schrader & Levine, 1987). This category of stimulus alteration is frequently employed when it is found that task difficulty (Weeks & Gaylord-Ross, 1981), or task boredom (Evans & Voeltz, 1982) appears to be correlated with high rates of aberrant behavior. By altering the instructional strategy to include less difficult material (Weeks & Gaylord-Ross, 1981), more functional routines (Evans & Voeltz, 1982), or more

enjoyable presentations (Carr, Newsom, & Binkoff, 1976), control can be established over the target behavior. Fading to the original instructional modality may or may not be attempted once behavioral issues are resolved. We have found that stimulus fading procedures are extremely valuable in reducing aberrant behaviors without resorting to punishment procedures. Often the originally problematic stimuli can be returned in unaltered form with a subsequent maintenance of low levels of the problem behavior. Whether this is due to the build-up of positive behavioral momentum, to the breakdown of the recency effect, or to other variables deserves further research attention.

4. *Stimulus Interruption.* This approach involves the discovery and subsequent breakdown of behavioral chains which terminate in the target behavior. The discovery of lower level or intensity behaviors which preceed the target behavior can pay handsome dividends. In one example, we were able to successfully modify one type of seizure activity by targeting the hyperventilation which reliably preceeded it (Schrader, Toomy, Davy, and Silverman, 1986). Other examples of this procedure can be found in the work of Zlutnick, Mayville, & Moffat (1975), Hamlet, Axelrod,and Kuerschner(1984) and Schrader & Levine (1987).

5. *Stimulus Control.* While, in a larger sense, all of the strategies in this section can be seen as employing the principle of stimulus control, a special case of stimulus control programming has been identified. This procedural approach

involves permitting the aberrant behavior to occur, but only under mediator prescribed conditions. In practice, this procedure suggests that certain levels of a target behavior can be tolerated if performed at specified times and/or places. The individual is permited to engage in the target behavior for a specified duration provided that the behavior does not occur during nonsanctioned times. This procedure involves a form of stimulus isolation wherein the behavior comes under the control of a particular stimulus cue presented by the mediator (e.g., time of day, mediator instruction to perform, completion of an activity). Examples of stimulus control programming have been provided for self-stimulation (Charlop, (1988), disruptive vocalizations (LaVigna & Donellan, 1986), and perseverative question-asking (Schrader & Levine, 1988).

Curricular Intercessions

Curricular approaches to behavior change have only recently come to the fore (Meyer & Evans, 1986). By curricular change strategies we refer to that body of work and clincial experience that suggests that excess behavior often represents a clear expression of a skills deficit. This deficit may be in the performance of a specific skill (e.g., self-help or leisure-oriented) or may represent the individual's attempt to communicate a need, refusal of a demand, or a request for assistance. If excess behaviors can be shown to have social-communicative intent, then failure to address this social message will invariably lead to short-term, if any, change. As we indicated above, a comprehensive change plan must take into account the functional meaning of the behavior for the individual. When the behavior in question results from a clear skills or communication deficit, then curricular intercessions are clearly required.

Curricular interventions can be categorized under the general heading of behavior replacement strategies (Iwata, 1987). What in essence we are attempting to do is replace the form of the behavior without replacing its function. In order for this approach to be successful, the replacement behavior must:

(a) fulfill the same function as the target behavior;

(b) be as efficient as the target behavior;

(c) obtain reinforcement as reliably as the target behavior.

To the extent that the target behavior is more successful in obtaining reinforcement on a richer ratio or if reinforcement is produced with significantly less effort, replacement will be difficult. It is for this reason that intervention is suggested across all three domains within a comprehensive framework.

As Figure 2 indicates, our curricular interventions span a number of skill domains. Assessment information obtained on the individual's functioning across these domains dictates whether intervention is appropriate and guides us in deciding what effect,if any, skill training in a given area will have on aberrant behavior. While the current chapter does not permit us to fully detail all training programs that might be invoked, a sampling of three areas of training should suffice to give the reader an understanding of the Curricular domain.

Communication training. A considerable amount of training is devoted to teaching individuals with challenging behaviors alternative means of communicating their intentions. A growing number of researchers (Carr & Durand, 1985a and b; Evans & Meyer, 1985; Horner & Budd, 1985) have found that formal training in asking for help, attention, wants or needs, and choice can dramatically reduce target behaviors which communicate the same intent, albeit with an inappropriate form. In a recent example, Day, Rea, Schussler, Larsen, and Johnson (1988) employed request training as an alternative, incompatible response to self-injurious behavior (SIB) with two developmentally disabled children. Results indicated decreases in SIB as approriate requesting increased.

Our own work in this area has focused on both identifying replacement communication skills and on infusing communication skills training across the entire day (Schrader, Wozniak, Toomy, Connett, & Kaufmann, 1989). In one example of this training, an autistic young man with severe aggression was determined to be an escape responder. In the design of the Treatment Triad for him, we included a communication component which enabled him to escape from any presented task at will, if he touched or held up a NO MORE WORK card which was placed on his desk. Training in the use of this card was conducted over several sessions until the individual was reliably pointing to the card shortly after entering the work area. Escape from work was immediately granted and the individual permitted to go to the break area. All reinforcement for the task from which he chose to escape was forfeited. Under these conditions, aberrant responding decreased dramatically. In addition, after a brief period of low productivity, work output improved to the point where it far exceeded the baseline rate.

In a second example we provided a young, moderately handicapped boy with a picture communication book which represented, in a pictorial format, all of the events of his day, all reinforcers available to him, and all tasks which he would be required to complete in order to earn reinforcement. In addition, pictures of the leisure area (symbolizing break), a teacher sitting next to him (indicating a need for help), and a teacher playing ball with him (a request for 1:1 time) were also included in the communication book. Prior to the implementation of this strategy, the child exhibited high rates of aggression, crying, and whining, particularly around work periods. After the communication system went into effect, reductions in all target behaviors were noted within a one week period. Further reductions in the aberrant behaviors came as more prosocial communication developed. Whatsmore, improvement in target behaviors spread to the home once the system was implemented in that setting.

Instructional control. Instructional control refers to training in compliance to requests. Our work has confirmed the prior work of Russo, Cataldo, and Cushing (1981) and Parrrish, Cataldo, Kolko, Neef, and Egel (1986), who found that compliance was often inversely correlated with aberrant behaviors. Increases in compliance reliably led to decreases in untreated inappropriate behaviors. This has led some researchers to dub compliance a "keystone behavior" (Meyer & Evans, 19875) because of it central importance in creating generalized change. Instruction following technology has taken many forms ranging from teaching requisite antecedent behaviors such as eye contact (Hamlet et al., 1984) to the development of systematic differential reinforcement procedures (Engelmann & Colvin, 1983).

In one of the more creative means of teaching generalized instruction following, Mace, Lalli, West, Belfiore, Pinter, and Brown (1988) developed a strategy of giving the target individual a series of high probability instructionsnot likely to lead to noncompliance, (e.g., shake hands, give me five). Once compliance was established, a higher risk instruction was given with subsequent increases in compliance for that instruction. The authors postulated that they had established a "behavioral momentum." This high probability strategy has been employed in our own work with very similar positive results.

Schedule and rule following An important aspect of our curricular interventions involves teaching schedule following across the day. Providing individuals with a written or pictorial schedule has been quite effective in reducing aberrant behavior born of anxiety around unpredictable changes in routines. Particularly for the autistic individuals with whom we have worked, the development of schedule following skills has been of great help in creating predictability and, incidentally, in enhancing language skills concerning past, present, and future actions. Depending upon the degree of sophistication of the target individual, self-monitoring and self-direction skills can also be taught thus reducing the commonly observed prompt dependency of this group.

In like manner, teaching individuals exhibiting challenging behaviors to follow posted, stated, or generic rules has proven useful. Viewing rule following as an element in social competence gives it priority as a goal of training. We have found that teaching rule following through correspondence training has merit with some moderately and severely handicapped individuals.As originally formulated (Israel, 1978), individuals are taught to state their intentions to engage in a particular behavior (the say condition) and then follow this with the actual intended behavior (the do condition) to create a correspondence between the two acts. In our treatment program, we have taught individuals to state the rules which apply in a given situation and their intention to follow those rules. When compliance is forthcoming, we reinforce the individual for doing what they said they were going to do. This has led, in some people, to verbal control over motor behavior, in other words, self-regulation.

Contingency-Based Interventions

The final component in the Treatment Triad involves contingency management strategies for addressing aberrant behavior after it occurs and developing reinforcement programs to encourage the absence of excess behavior or, more importantly, the presence of incompatible behaviors. Our approach within this domain follows traditional contingency management procedures including DRO, DRI, and DRL schedules of reinforcement, and token and other mediated symbolic incentive systems. In terms of ease of implementation, we have found that momentary DRO schedules work just as well as the more arduous whole interval DRO, with the schedule of contact being easily adjustable to correspond to periods of varying risk.

On the whole, we prefer DRI and DRC (Differential Reinforcement of Communicative Behavior) schedules to DRO programs. DRO programs are problematic in that they merely reinforce for the absence of behavior rather than for the presence of some specific incompatible response. In this manner, the DRO schedule fails the "dead man test" in that the best person to maximize reinforcement on this schedule is someone who is dead. While DRO programs have their place, we have found they are much more effective when used in combination with DRI and DRC schedules.

A second category of interventions which we commonly employ involves the stimulus change of a different type than described in the section on antecedent interventions. When used as a consequent strategy, stimulus change refers to the provision of a competing stimulus or event contingent upon the aberrant response: what has been called "redirection." To the extent that the individual is functioning within an enriched environment with a multitude of activities, materials, and attention, redirection can be a powerful procedure which can circumvent the need for aversive programs. To be maximally effective, the redirected activity should be one that has a positive valence for the individual or is in some way novel, is physically or functionally incompatible with the target behavior being exhibited , and is provided as early in the escalation sequence as possible.

Considering the subject matter of this volume, we would be remiss without a brief discussion of the use of aversives within the triadic model. As the foregoing discussion implies, the use of aversives is seen as an option of last resort. It is only after all positive avenues have been tried and failed that aversive consequences are considered for inclusion within the comprehensive program. Particularly in the case of severely aberrant behaviors such as self-injury, serious aggressive behavior, and life-threatening behaviors such as rumination and pica, programing negative consequences may be unavoidable. If we have done a thorough assessment, designed a treatment protocol which attempts to remove high risk triggering events, provided an enriched environment, and taught functionally equivalent alternatives to the target behavior, then failure to modify these serious aberrant responses would indicate an inability to remove the potency of reinforcement for the behavioral excess. In order for our programming to compete in terms of efficiency, reliability, and potency of reinforcement , it has been our experience that we must sometimes decrease the attractiveness of the problematic excess. The use of negative consequence programming is one way to accomplish this end.

If an aversive is contemplated, we and any review team, must be convinced that all positive programming efforts have failed despite consistent efforts on the part of staff. Supporting data must be available for inspection and as empirical justification of the failure of positive procedures alone to modify the target response. When an aversive is employed, it must be:

(a) a procedure which is commonly used with nonhandicapped same-aged peers;

(b) conducted in an ecologically engineered environment characterized by extensive skill training programs like those discussed in the curricular section of this chapter;

(c) accompanied by a plan to fade out and discontinue its use in favor of a more self-control oriented program;

(d) approved by all interested parties and reviewed on a regular basis to determine its efficacy.

CASE ILLUSTRATIONS

Behavior Maintained by Negative Reinforcement

Aberrant behavior which communicates a desire to escape from demands or specific tasks is quite common among developmentally disabled persons. The Treatment Triad approach to the management of this class of behaviors is summarized in Table 2. As the table indicates, our general goal with escape-based aberrant behavior involves the creation of an environment which approaches an error-free level of task difficulty, teaches the individual sanctioned escape routes, and provides reinforcement for task completion, use of verbalizations, and generalized compliance.

The design of the Treatment Triad for John, a 16-year-old autustic adolescent, manifesting severe aggressive behavior, is illustrative of the approach to negatively reinforced behavior. Prior to treatment implementation, a functional analysis was performed using the instruments and techniques described above. The results of the assessment are summarized below.

Antecedent Analysis

John 's teachers were asked to complete the Antecedent Assessment Scale, The Risk Plot, and the Setting Event Checklist. An analysis of the Antecedent Assessment Scale indicated high loadings on the demand-based factor (e.g., behavior increases after a task demand is made, behavior is at low rates when tasks are not present) with ecological variables ranked as the second most likely source of triggering events (e.g., noisy or unpredictable environment). The Risk Plot revealed that John was most at risk during the 10 to 11 am period when table work was routinely scheduled, and again at 1pm, when outdoor recreation was scheduled. Lesser risks involved periods of transition from one activity to another and early morning leisure time in a defined area. Little or no risk was evident during periods of solitary leisure, 1:1 social interaction, running errands, eating lunch, and going on community outings. Finally, the Setting Event Checklist pointed to disruptive behavior on the bus ride into school as a high risk event for later disruptive behavior at school.

Table 2
The Triadic Treatment Model of Behavior Maintained by Negative Reinforcement

Assessment

Does behavior:

1. occur following a request to perform a difficult task?
2. occur when any request is made?
3. occur to upset you when a request is made?
4. stop shortly afer demands are reduced?
5. reduce when easy tasks are given?
6. occur less after client-selected activity or if a choice is given?
7. occur when client is alone or enjoying a preferred solitary activity?

TREATMENT TRIAD

A. ECOLOGICAL

1. Modify task difficulty level/duration/order/location/functionality of task.
2. If necessary, significantly reduce or even eliminate demands to create a zero baseline condition.
3. Eliminate high risk evens if possible and known.
4. Present clear task termination signals.
5. Provide choices when possible.
6. Embed less preferred tasks in between 2 high preference tasks.
7. Employ a pretasking or "high p" strategy when giving instructions (i.e., start out with high preference instructions ("give me five") before giving the actual instruction.
8. Examine and modify if necessary the error correction techniques employed.
9. If refusal or escape is signalled by lower level behaviors, use this signal to modify or remove task before higher levels of agitation occur.

B. CURRICULAR

1. Teach a communicative response which indicates:
    - o need for help

  - o desire for break
  - o desire to do something else

2. If fear-based escape, teach awareness and/or relaxation techniques.
3. Employ correspondence training strategies.
4. Analyze curriculum for functionality and effective use of prompting strategies.
5. Teach schedule-following behaviors.

C. CONTINGENCY MANAGEMENT STRATEGIES

1. Provide reinforcement for task attempts.
2. Reinforece task completion or longer and longer durations of staying on task.
3. Reinforce with task removal or change all appropriate attempts to escape (DRC).
4. Analyze reinforcement strategies to make sure that an appropriately potent reinforcer is being employed.

Behavioral Parameters

Observations of the both the target and possible incompatible behaviors were performed. The most striking outcome of these observations involved the response of mediators to aggression. In total, 18 occurrences of aggressive behavior (hitting, throwing over tables, scratching) were observed over a 5 day period. Of these 18 occurrences, 12 followed a request to work or to comply to an instruction; 4 occurred during a transitionary period; and 2 followed a short period in the leisure area. Staff response to aggression was consistently to terminate the work request or instruction and remove their attention from John. If aggression was seen during transition, one staff would stay back with John or accompany him 1:1 to the next activity. Aggression witnessed while John was in the leisure area was consequated by his removal to a different part of the classroom.

Assessment of potential replacement behaviors pointed to a number of deficit areas. John was essentially nonverbal although there had been numerous reports of his speaking in phrases at isolated times. He communicated with staff using enactment strategies, typically taking staff by the hand and leading them to what he wanted. He had no generative yes/no responding nor any signal which he employed to indicate displeasure with what he was doing, short of becoming aggressive. John had little idea of the class' schedule and no approach responses to peers in the classroom.

Consequent Analysis

The Motivation Assessment Scale was completed by staff as a means of corroborating observed patterns within the classroom. The results of the scale indicated very high loadings on the escape factor, followed with lower loadings on attentional factors. This data confirmed our observations that John was primarily an escape responder with little appropriate means to express this desire.

Ecological

1. Present only tasks around which John has achieved success.
2. Whenever possible, present tasks within an age-appropriate curriculum.
3. If table tasks are being employed, present material in a paced fashion stressing rapid style of presentation and frequent reinforcement.
4. Instruction giving should follow the "high probability" model of embedding more difficult instructions between familiar, pleasant instructions or interactions (e.g., shake, give me five).
5. Reduce schedule work time during the 10 to 11am period to no more than 15 minutes total, 5 minutes at a time (unless terminated by John).
6. Provide John will a pictorial schedule of the day's events and review it with him at the beginning of the day and prior to each activity; particularly immediately before transitions.
7. Substitute indoor for outdoor recreation.
8. Reduce noise levels in the class by giving John a Sony Walkman to listen to during break and leisure time periods.
9. During scheduled transitions, position yourself between John and all other students until transition is completed.

Curricular

1. Teach John to refuse activities by using his NO MORE WORK card. Contingent upon John pointing to or touching the card, he is to be excused from the activity and directed to the break area until the start of the next activity or until he voluntarily returns to work. John loses his reinforcement for staying on task but no other negative consequences should follow.
2. John should be given instruction in following a pictorial schedule. Completion of any pictured item should lead to that item being covered up and the next activity uncovered.
3. Teach John to make a greeting response to peers such as raising his hand in a "hi" gesture or shaking hands.
4. Begin teaching deep breathing as a behavior incompatible with agitation. Model this response for John during low risk situations throughout the day and during transitions.

Contingency-Based

1. Reinforce with praise and punches on his card all instances of: compliance to requests, 20 second increments of on-task, work completion, use of NO MORE WORK card, and each 30 minute period of non-aggression.
2. John can trade in punches on his card for preferred reinforcers using the agreed upon exchange rate.
3. All occurrences of aggression should be managed by a resetting of the DRO timer and a cessation of the punch card program until John regains control.

4. If John leaves the work area without using his card, prompt him to return and hold up the card before leaving. Reinforce use of card with punch on card.

Results of Programming

The results of the program outlined above are presented graphically in Figure 2. As the graph indicates, substantial reductions in aggression were seen after program implementation. John began using his NO MORE WORK card immediately and work records indicated an average of less than one minute of work over the course of the first week of the program. However, beginning with week 2, John began to stay at his work area for longer and longer periods of time and the number of punches which he earned quadrupled over the next 4 weeks. Work output far exceeded baseline levels and rates of compliance increased from 40% to 80% of all instructions given. Follow-up data collected on John after 6 months and one year indicated a maintenance of these gains and the anecdotal information that John was now using a picture book system to communicate several different desires, including choice of work material.

Insert Figure 2 about here

Behavior Maintained by Positive Reinforcement

A second class of responses are those maintained by positive reinforcement. The Treatment Triad model for the management of positively reinforced behavior is presented in Table 4. Positively reinforced behavior is typically handled through arranging the environment so that only appropriate behavior can be attended to, developing alternative ways for the individual to receive attention (e.g., via request, task completion, rule following), and differentially reinforcing appropriate attention seeking and independent leisure behaviors.

Insert Table 4 about here

Jenny is a 20 year old multihandicapped young woman with total hearing loss and limited vision. She had been diagnosed as severely handicapped with extensive deficits in social skills, attention to task, and the ability to delay reinforcement. Jenny's most problematic excesses surrounded her severe aggression and self-injurious behaviors both of which were usually exhibited in a chained fashion. The functional analysis performed yielded the following results:

Antecedent Analysis. The Antecedent Assessment Scale revealed high loadings on the Interpersonal factor, corresponding to a variety of attentional variables (e.g., when staff is occupied by others, when others are being disruptive). The Risk Profile indicated that her highest risk activities were waiting for reinforcement, the issuance of an initiating instruction, the presentation of difficult tasks and independent tasks, immediately after being given reinforcement, and the presence of new or substitute staff. Low risk events included mealtimes, being given 1:1 attention, being taken on community outings, and working for edible reinforcers. Setting events which correlated with aberrant behavior included returning to the facility from a home visit and riding on the van.

Behavioral Parameters

Observations made in both the school and residential components of the program indicated 15 aggressive outbursts over a 3 day period. Ten of the occurrences followed staff giving attention to another student, 3 outbursts were seen after Jenny had been at work for 5 minutes without staff contact, and the remaining 2 episodes were the result of her being asked to wait for earned reinforcement. Staff responded to aggression by either ignoring Jenny (if low level aggression) or repremanding her if the aggression was more intense. In the case of aggression related to a request that Jenny work independently, Jenny's behavior led staff to approach her and ask if she wanted a different task (along with 1:1 attention).

An analysis of Jenny's potential incompatible behaviors revealed the fact that she understood and possessed a 25 word sign vocabulary and understood pictures. Few of the staff in the residential or school programs could sign so most of Jenny's appropriate communicative behavior was extinguished by a lack of an environmental response. She was not observed to ask for help with a task or an instruction. A number of social approach responses were observed (e.g., moving close to a group, sitting next to a peer). However, staff responded to this intitiation less than 25% of the time.

Consequent analysis. The Motivation Assessment Scale revealed high ratings for both the Attention and the Tangible factors. This, once again, confirmed our observations that the behavior was exhibited to gain staff attention or to obtain an object which she had been told she could not have.

The following interventions were simultaneously implemented.

Ecological

1. Jenny should have a variety of materials available to her around which to interact. Staff should attempt to provide some contact with Jenny at least every 5 minutes.
2. If other students become disruptive, Jenny should not be ignored, but rather redirection and attention should be provided.
3. Since Jenny enjoys working, a variety of tasks (e.g., laundry folding, setting table) should be provided for which she can get some staff attention and praise when completed.
4. A pictorial schedule should be developed and made available to Jenny. This schedule would depict the day's events and help Jenny to understand the sequence and order of the day. Staff should review the schedule at the beginning of the day, prior to each scheduled activity, and during the dorm hours.
5. Whenever possible, Jenny should be given a choice as to the reinforcers available to her, the type and amount of assigned work, and break points.
6. Waiting is a known high risk time. When possible, staff should plan activities with an idea toward reducing wait time. Anticipated events should not be discussed until they are ready to actually happen. If waiting is inevitable, Jenny should be given some diversionary activity to occupy the waiting period.

7. Since community outings appear to be a low risk time as well, as much training as possible should occur in the community.

Curricular

1. Extensive communication training is a critical component of Jenny's program. Pictorial representations of a variety of needs, desires, and refusal options should be developed and implemented. Card usage should be prompted before all communication opportunities and be utilized in the classroom and in the residence.
2. Reinforcement of all communicative attempts (DRC scheduling) should be undertaken. Even if this communication signals a desire to escape from work, the request should be honored.
3. Independent leisure training should also be undertaken. Jenny may enjoy such activities as photography, arts and crafts, and sewing, and reinforcer sampling of some of these activities would be profitable. Reinforcement for task attending and for longer and longer periods of indepedent leisure should be provided.
4. In order to address social skills deficits, Jenny should be taught a greeting response to peers and staff. This might help her to be included in games and interactions around the dorm. The development of a pictorial conversation book to enhance Jenny's ability to discuss present and past events should also be considered.
5. Wait training is also a priority training need. Setting a visual signalling device to give Jenny feedback on how long she must wait is the first step in this training. Waiting intervals can be

gradually increased once Jenny is successfully managing shorter intervals.

Contingency-Based

1. A token or punch card system should be implemented to reinforce Jenny for: appropriate social interactions (e.g., greetings, group game playing), attention to task, completion of chores, use of communication book, following the schedule, successful community outings, successfullly waiting for events to occur, and for the absence of aggression and self-injurious behavior per 60 minute period.
2. Punches are exchangable for edibles, drinks, and activity reinforcers at selected times throughout the day.
3. If aggression or SIB occurs, all other students are to be removed from the immediate area to avoid injury. Jenny is to be ignored until she indicates by her behavior (e.g., compliance to a staff request) that she is calm and ready to return to work. Once calm, the punch card system should be reimplemented as soon as possible.

Results of Programming

As indicated in Figure 3, reduction in aggression/self-injurious behavior was clearly evident within one week of treatment. Baseline levels of approximately 5 episodes per day were reduced to near zero levels after 3 weeks of intervention. Reductions in the target behavior were accompanied by increases in 2 correlated behaviors, communicative attempts and ability to wait for reinforcement and for anticipated events. Staff reinforcement of all attempts to communicate a need or desire (DRC scheduling) resulted in a five fold increase in the use of communicative symbols, in this case, pictures. Additionally, staff reported that Jenny, with the help of the timer, was able to wait for periods of up to an hour for reinforcement and up to a half-hour for an anticipated event. Follow-up at the six month and one year marks indicated, to a large degree, that Jenny had maintained her treatment gains.

The Logic of an Eclipse

We have presented a multicomponent, nonaversive treatment model with supporting case illustrations. We have found the model to be successful in the vast majority of serious clinical cases, representing a wide range of severe behavior problems. In spite of its successfulness, we cannot argue, no less prove, that nonaversive procedures will work with all cases. This belief is not universally held. Some eminent behavior analysts like Sidman (1989) and Touchette (1989) feel that nonaversive procedures can be successful with all cases. Other investigators, e.g., Durand (1988) and Lovaas (1988) feel there still may be a need for aversives. Just drawing from the reported literature (e.g., Lovaas & Simmons, 1968), there are cases where repeated trials with positive procedures had been tried (for months or years) and failed. Subsequently, aversive techniques successfully suppressed the behavior. Logically, it is impossible to prove that all positive procedures have been tried and failed. This is due to a potentially infinite number of positive procedures. One will never be able to sample them all. Thus, we practically fall back on the clinical judgement of experts and consumers to make this determination. Mathematically, there is a porportion of individuals with severe behavior problems who can be successfully treated with nonaversive approaches. There is also a proportion of cases who don't benefit from positive approaches and can gain with aversive techniques. Given the advances in nonaversive technology, the former population should increase and the latter decrease over time. Our intuitions tell us there will not be a full eclipse in the future, but in this case it would be nice to be proven wrong.

Values and Behavior Treatment

The aversions of society toward aversive technology should continue to grow. Since the aberrant behavior of severely disabled individuals has little impact on society (versus a homicide), more public attention will be drawn to the distasteful nature of the aversive procedures. Individuals who fail to improve with positive programs and who are denied access to an aversive procedure, will likely be further cloistered (institutionalized), out of sight (Mullick, 1986), and will have little impact on treatment policy.

Ethicists pondering this issue ought to consider two conflicting sets of values. There is a certain parallelism between the issues surrounding capital punishment and victums rights. When focusing on the odious nature of punishment by execution, one is repelled by the barbaric nature of this form of punishment. Yet, when considering the violation of the victum and appropriate retribution, capital punishment and other extreme aversives may seem palatable (at least they recently have to the majority of the American populace). Similarly, the seemingly abusvie nature of aversive procedures must be balanced against the right to receive treatment. Griffith (1983) has presented an eloquent discussion of these often conflicting principles. In citing the Wyatt v. Stickney (1972) case, he invokes the quid pro quo nature of treatment, i.e., a clear benefit (the cessation of self-injury) must be weighed against a particular cost (the exposure to noxious stimuli). Furthermore, Griffith cites the eight and fourteenth ammendments as the right to protection from harm (self-injury); or as Barrish (1974) has stated not "applying an effective technology to a person enduring pain and suffering far worse than the small amounts of punishment connected with any techniques," (p.34). Our point is that values discussion of this issue must display sensitivity to both treatment abuses with aversions and the rights to receive particular treatments.

A problem in the consideration of aversive procedures is that it is confounded with quality of treatment issues. That is, one may consider the efficacy of aversive procedure under controlled experimental procedures. Yet, when behavior modification techniques are used in the field by practitioners there are ample opportunities for abuse. In fact, Durand (1988) has remarked that even among highly trained professionals, he is surprised how many poor practices may be evident. One problem may be "sloppy" practice where contigencies and cues are not delivered properly. More problematic, is a violation of the two-phase model. That is, many practitioners rush too quickly into using aversives before an adequate exploration of nonaversives is completed. To prevent this form happening, Durand has advanced and "obstacle" model. That is, considerable treatment guidelines and judicial safeguards must be put in place in order to prevent the preemptive application of aversives. Only after an exhaustive exploration of positive procedures has been made, may aversives (Phase 2) be entertained.

Certification

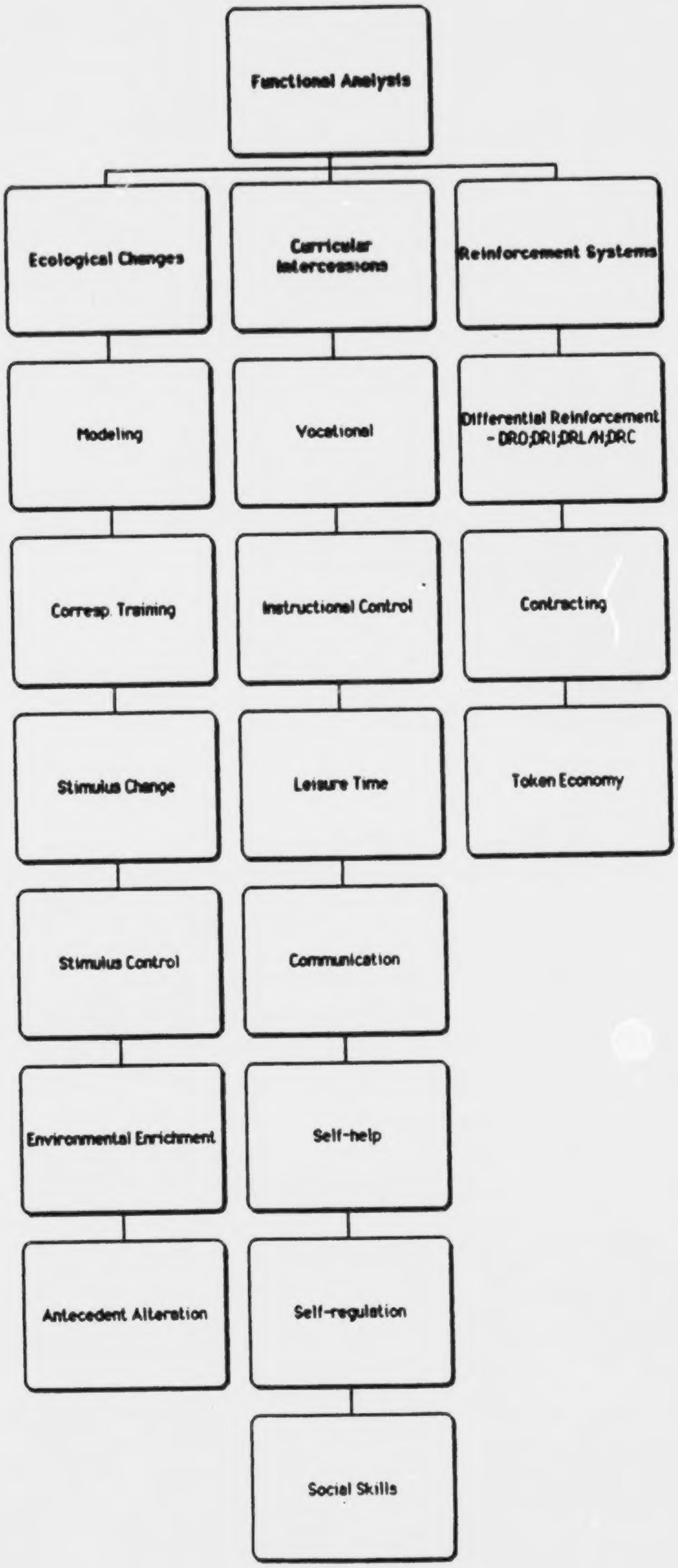
We feel that more stringent certification procedures are needed to ensure quality control in the application of aversives. In the past Carr and Lovaas (1983) and Risley (1976) have called for certification procedures. It would first be important to identify a pool of professionals who have considerable experience in using aversives under controlled experimental conditions. In order to become certified in these techniques (parallel to medical board certification), one would have to serve an apprenticeship or internship with an existing certified fellow. Further peer review and inservice activities could be built into this certification process.

Summary

We have reviewed a considerable amount of information wich reflects our case experiences, conceptual models, and human values. We have advanced a triadic treatment model which has proven successful with a number of intractible cases. The model should be viewed within the growing body of effective nonaversive technology. Our model is quite practitioner-oriented, particularly in the way it simultaneously implements a number of treatment components. Future research will have to parse out the causal components of the model with particular cases.

In spite of the expanding efficacy of nonaversive technology, we still feel there is a need for a two-phase treatment model. The model needs to be augmented with more regulated and statutory obstacles to ensure treatment quality and to avoid the premature use of aversives. The treatment model is finally sealed with stringent certification requirements for professionals. In summary, we feel that a triadic, two-phase model for the treatment of aberrant behavior should advance the treatment of individuals with serious behavior problems in a most efficacious and humane way.

FIGURE 1


Functional Analysis
Ecological Changes
Curricular Intercessions
Reinforcement Systems
Modeling
Vocational
Differential Reinforcement - DRO;DRI;DRL/H;DRC
Corresp. Training
Instructional Control
Contracting
Stimulus Change
Leisure Time
Token Economy
Stimulus Control
Communication
Environmental Enrichment
Self-help
Antecedent Alteration
Self-regulation
Social Skills

← highlight!

2. Develop a picutre book communcation system to teach appropriate conversation.
3. Teach person to ask for feedback (e.g., "How am I doing?").
4. Teach social skills involved in getting attention in an appropriate manner.
5. Develop a wait program designed to teach person to delay immediate need for attention.
6. Teach scheudle-following as behavior incompatible with excessive attention-seeking.
7. Attempt to develop and reinforce independent leisure skills (e.g., hobbies).

C. CONTINGENCY MANAGEMENT STRATEGIES

1. Develop contingency management program for earning desired tangible objects.
2. Provide high level of reinforcement for engagement in environmental activites, absence of the target behavior, and for periods of calm, controlled interaction.
3. Increase physical affection (if desired) throughout the day.
4. Reinforce with praise/points/punches on card all instances of compliance to requests.
5. Provide reinforcement for independent engagement with leisure activities.
6. Respond to all requests for attention which are appropriate.
7. If serious attention-seeking behavior occurs, attempt redirection to low risk activity and provide reinforcement when person is engaged.
8. Continue redirective efforts unless behavior becomes too dangerous to manage. If this occurs, remove others from immediate environment until person is calm.

THE TRIADIC TREATMENT MODEL FOR BEHAVIOR MAINTAINED BY POSITIVE REINFORCEMENT

ASSESSMENT

Does behavior:

1. increase when attended to?
2. decrease when ignored (after extinction burst) or when person left alone.
3. occur to get a tangible object (e.g., toy, edible)?
4. increase when attention is terminated?
5. occur to upset or annoy you when person not being attended to?
6. stop occurring after you give person the toy or object requested?
7. occur after being told that s/he cannot do something?

TREATMENT TRIAD

A. ECOLOGICAL

1. Ensure adequate engagement with enviroment.
2. Make a variety of materials/activities available to the person upon request.
3. Employ intermittent supervision strategies to contact each person at least once every 5 minutes.
4. Provide person with choices of activities and objects.
5. Provide advance warning around transitions and reinforcement for successful transitions.
6. If task related, make sure that tasks are not too difficult or prolonged.
7. Employ shaping strategies to teach new tasks.
8. If others are being disruptive, try to increase attention paid to nondisruptive individuals.
9. Separate peers who are at high risk for triggering aberrant behaviors.
10. Keep objects which are not permissible out of visual range of person.

B. CURRICULAR

1. Develop a communication system using verbalizations, pictures, or symbols to represent desires.

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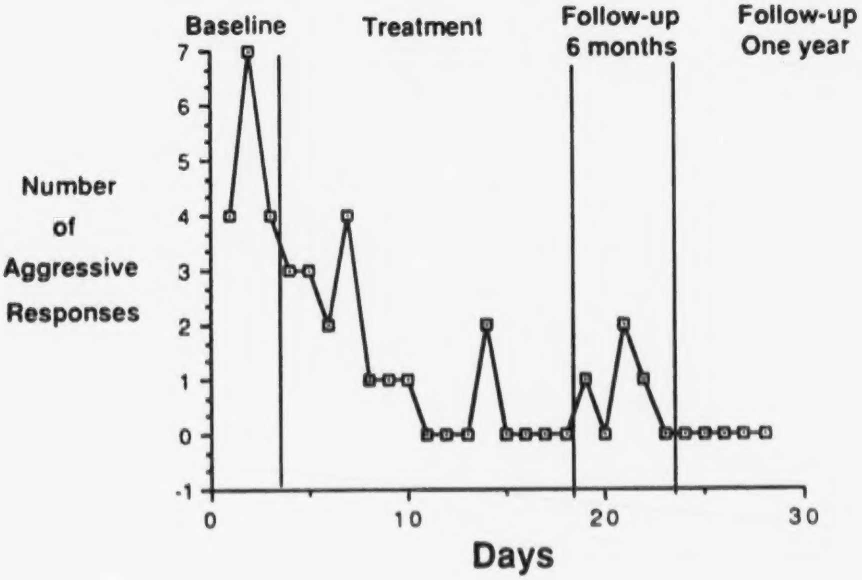
Baseline
Treatment
Follow-up 6 months
Follow-up One year
Number of Aggressive Responses
7
6
5
4
3
2
1
0
-1
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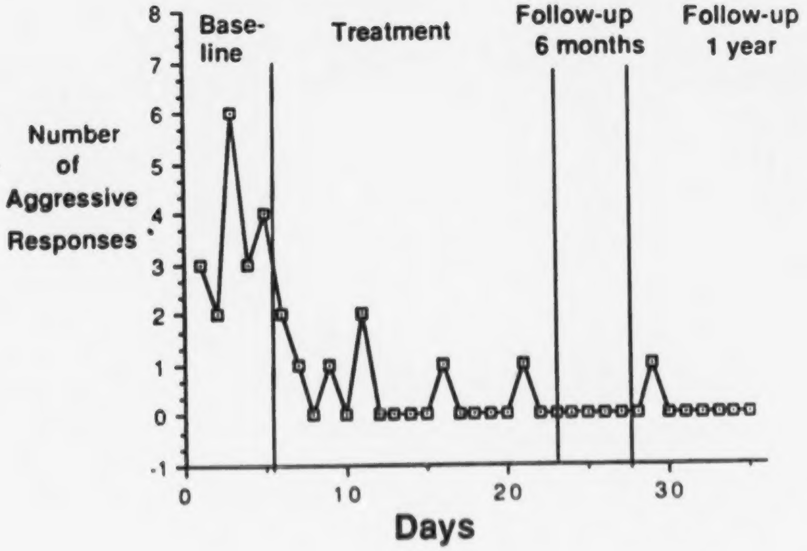
10
20
30
Days


Base-
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Number
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Vocational and Transition Issues for Seriously Emotionally Disturbed Adolescents and Young Adults*

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Running Head: Vocational

This paper represents the basis of two presentations made at the annual conference of the Council for Children with Behavioral Disorders in Charlotte, North Carolina on 9/29/89 by the authors, as well as an extensive review of the literature. Preparation of this document was supported by grant funds from the federal office of Special Education Programs; however, no endorsement of the opinions described herein by that agency should be inferred.

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2. Vocational

There is perhaps no disability group as misunderstood and as underserved as adolescents and young adults with serious emotional disturbances (SED). Moreover, there is an absence of research and development specific to the community integration and vocational training of secondary level SED students. Nelson and Kauffman (1977, p. 102) found that "the provision of educational services for behaviorally disturbed adolescents has lagged far behind services for younger pupils, particularly in the public schools" and that there are a dearth of curricular materials for use with these students. Scruggs and Mastropieri (1985), in a review of all articles published in the Journal of Behavioral Disorders, noted few studies on SED adolescents and virtually no research conducted in the community setting with this group. The lack of an empirical foundation for vocational and functional life skill interventions is underscored further in three monographs (Braaten, Rutherford & Kardash, 1985a; Braaten, Rutherford & Evans, 1985b; Fink & Kokaska, 1983), in which service programs and research designed specifically for SED adolescents are presented. Each reference acknowledges that relatively few programs have been developed for this clientele, and that very little research has been conducted on these pragmatic subjects. This absence of information and guidelines for practice stands in contrast to current professional interest and investigations on work preparation and job placement of special needs students with severe handicaps (Clark & Knowlton, 1987).

In recent years, projects have been initiated to examine the post-school work experiences of students with handicaps, with some including SED adolescents and young adults (e.g., Edgar & Levine, 1987; Hasazi, Gordon & Roe, 1985; Mithaug, Haruchi & Fanning, 1985), and isolated vocational demonstration projects have been conducted with this clientele (e.g., Gaylord-Ross, 1986; Fredericks & Evans, 1987). From these efforts it is known that many SED students drop-out of school before completion, (Butler-Nalin & Padilla, 1989; Edgar & Levine, 1987; Wagner & Shaver, 1989), most do not go on to postsecondary education programs (Neel, Meadows, Levine, & Edgar, 1988), high rates of unemployment are encountered (Hasazi, et al., 1985), if work is secured the jobs that are obtained tend to be menial in nature with a limited future (Neel, et al., 1988), and that many vocational problems experienced by SED students relate to inappropriate social behavior in the work place (Bullis, 1989; Gaylord-Ross, Siegel, & Bullis, 1990).

One apparent answer to these problems is to provide SED adolescents with comprehensive vocational and functional skill training while in school, in the hope that they will succeed in their vocational and community integration endeavors after leaving school. However, as noted above, there is precious little research in this area and few concrete rules exist to structure such programs. This absence of information is crucial to professionals charged with providing vocational and functional skill training. These students can be challenging enough to serve within the confines of the school building. When programs are extended to the unique and usually less structured environment of community-based sites, the service delivery issues compound in complexity and the possibilities for trouble multiply. Moreover, the student's transition from the school environment to the community can often be complicated by a lack of adult service resources and confusion in the service delivery process (Kortering & Edgar, 1988; Maddox & Edgar, 1988)

The purpose of this document, then, is to review and discuss literature on the vocational training and school-to-community transition of SED adolescents. First, the SED category is defined and major dimensions of deviant behavior exhibited by persons in this age group are described. Second, research that has been conducted on the community adjustment of this group is summarized. Third, assessment procedures that can be used to structure vocational instruction are examined. Fourth, social skill training procedures specific to vocational preparation and placements are presented. Fifth, overviews of two model demonstration vocational training programs for this population are offered. Finally, the business, societal, and political factors that impact upon both the general job market and the employment opportunities for SED students are discussed.

We should note that our own philosophy of education is closely aligned with a cognitive-behavioral approach, thus we believe it both correct and helpful to consider deviance in terms of disordered cognition and behavior. Accordingly, we belong to the camp of professionals who prefer to call this group of students "behaviorally disordered". In keeping with the current federal definition and to maintain consistency throughout this paper, though, we defer to the term SED, but emphasize that our discussion may reflect our philosophical bias.

Description of the Population and Data on Their Community Adjustment

Any discussion of students considered to be "seriously emotionally disturbed" (SED) must, by necessity, begin with the definition of this term. The discussion of this topic is limited by the space and purpose of this document, the breadth of the subject, and the considerable debate that surrounds the description of the category. Accordingly, we present a broad overview of this controversy and provide a context for the reader to begin to understand this population, and their unique needs and characteristics. For detailed discussion of the issues pertaining to the definition of SED the reader is referred to Bower (1982), the Council for Children with Behavioral Disorders Executive Committee (1987), Forness, (1988), Honig (1986), Kauffman (1989, p.3-43), and MacMillan and Kavale (1989).

While the advantages and disadvantages of labeling students has been, and in all probability will continue to be, debated for some years to come (eg., Hobbs, 1975), the fact remains that the administrative structure of the special education field, its funding, professional training, and service provision are all driven--to some extent--by the categorical approach. Right or wrong, instruction to learners with special needs is articulated directly and indirectly by the particular label a student carries. For example, students who are profoundly mentally retarded are taught in different ways as compared to students who are SED. However, given the considerable professional concern that has been raised about the categorical orientation (Hallahan & Kauffman, 1977), it is clear that extreme care and caution must be exercised when talking or making generalizations about any category of special needs students. This caveat must be taken to an extreme when considering the SED term and the population of people to which it is applied.

The SED label itself evokes varying reactions and conjures different visions of just how the SED student looks, behaves, and functions. Are students considered as SED psychotic? Are they dangerous? Do these students carry psychiatric diagnoses (from the third edition of the Diagnostic and Statistical Manual of the American psychiatric Association, DSM-III)? Are students who are adjudicated also labeled as SED? How long must students be deviant in order to be labeled as SED? Unfortunately, there are no hard and fast rules to any of these questions.

It is important to note that SED is an educational term and designation that relates primarily to academic, learning problems exhibited by a student as a consequence of his or her emotional characteristics. Current conceptualization of serious emotional disturbances is based in large part on the work of Bower (1981). He identified five behavioral characteristics as the core of this category.

1. An inability to learn which cannot be explained by intellectual, sensory, or health factors . . .
2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers . . .
3. Inappropriate types of behavior or feelings under normal conditions . . .
4. A general, pervasive mood of unhappiness or depression . . .
5. A tendency to develop physical symptoms, pains, or fears associated with personal or school problems (Bower, 1981, pp. 115-116).

These basic elements have been altered in the current federal definition (Education of the Handicapped Act, Section 121a.5).

> "Seriously emotionally disturbed is defined as follows:
> (i) The term means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:
> (A) An inability to learn which cannot be explained by intellectual, sensory, or health factors;

> (B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
> (C) Inappropriate types of behavior or feelings under normal circumstances;
> (D) A general, pervasive mood of unhappiness or depression; or
> (E) A tendency to develop physical symptoms or fears associated with personal or school problems.
> (ii) The term includes children who are schizophrenic [or autistic].[1] The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed. (45 C.F.R. 121a.5[b][8][1978])

Many professionals (eg., Bower, 1982; Kauffman, 1989) have been critical of the definition, noting several weaknesses and inconsistencies. For example, how long must a student experience disordered behavior to be labeled as SED? What is academic performance? Does academic only refer to grades or does it include inappropriate social behavior? And, finally, what does it mean to be socially maladjusted but at the same time not SED? This last point has been particularly problematic and confusing. Kauffman (1989, p. 25) states "the final addendum regarding social maladjustment is incomprehensible. A youngster cannot be socially maladjusted by any credible interpretation of the term without exhibiting one or more of the five characteristics (especially B and/or C) to a marked degree and over a long period of time (Bower, 1982)."

It may well be due to these problems that the interpretation of the federal definition has varied considerably, as have the terms applied to this category of students (Cullinan & Epstein, 1979). The interpretation of the federal definition differs from site to site and there is no uniform label used for these students from state to state or even from city to city within a particular state. Consequently, problems with the definition and the label used to describe these students make it is very difficult to generalize the results of empirical studies conducted in one region to another, or to talk meaningfully about the population of SED students (Kavale, Forness, & Alper, 1986).

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[1]. The federal definition has been revised to exclude autistic students. Autism is now a subcategory under "Other Health Impaired."

Because of the problems of terminology and labeling, a new label and definition has been advanced for this group of students and is currently under review by different professional and governmental groups (Forness, 1988). Moreover, the Council for Children with Behavioral Disorders has issued a draft position statement on the provision of educational services to students with conduct disorders (Peterson, 1990). While both of these documents are bound to be revised somewhat through the feedback process, their intent is to address and, hopefully, to resolve the problems described above. For example, the position paper on conduct disorders firmly states:

> It is the position of the Executive Committee of the Council for Children with Behavioral Disorders that conduct disorder is one of several behavior patterns subsumed under behavioral disorder/emotional disturbance. The exclusionary interpretation represents a serious error that threatens to have grave consequences for children with behavioral disorders. Examination of both the eductional and psychological assessment literature leads to the inescapable conclusion that we lack both the definitional criteria and the assessment technology for making valid discriminations between social maladjustment and emotional disburbance.

While it is probable that these two documents will help to more clearly explicate the parameters of the field and expand the numbers of students identified for this category and subsequently served (Kauffman, 1989), it must be noted that the population of students will still be highly heterogeneous. Students who are depressed will carry the same label as students who are delinquent and display antisocial behavior. Logic, as well as research, would dictate that these two groups of students need different kinds of interventions to benefit from education.

Sophisticated statistical analyses (eg., Achenbach & Edelbrock, 1981; Quay, 1979, 1989) support the notion that emotional disturbances or psychopathology exhibited by children and adolescents can and should be considered in terms of major dimensions of deviant behaviors. We strongly believe that care be taken to avoid the generalization that all SED students are the same. They are not, and they must be served in light of the type of behavioral problems they tend to exhibit. It follows that vocational/transition programs will be effective, or more effective, if they are aimed at the type of student, or better yet, the type of deviant behavior they tend to exhibit. In the interest of planning intervention systems, programs, and curricula it makes sense to focus on empirically-based classifications of SED students. The rest of this part of the chapter provides a brief introduction to a basic taxonomy of deviant behavior. The interested reader is referred to Achenbach (1985), Achenbach and Edelbrock (1981), Achenbach and McConaughy (1987), and Quay (1979, 1989) for indepth discussion of this topic.

The problem of defining and measuring psychopathology among children and adolescents has not received the same amount of attention that emotional problems among adults has received (Achenbach, 1985; Quay, 1989). In fact, there is speculation that adult measurement and classification systems (DSM-III) are not relevant to the younger age group. Accordingly, a radically different manner of conceptualizing behavior problems among children and adolescents is necessary (Achenbach, 1985; Quay, 1989). Two prominent and well known programmatic efforts have been conducted to elucidate the dimensions of deviant behavior among children and youth.

Achenbach and his colleagues have examined the structure of deviant behavior among this population for over 20 years (Achenbach, 1982, 1985; Achenbach & Edelbrock, 1978, 1981; Achenbach & McConaughy, 1987), largely as part of their extensive work on the development of a meaningful assessment of deviant behavior among this age group: the Child Behavior Checklist. Through a series of studies designed to analyze the existing empirical literature on the classification of psychopathology for children and adolescents (eg., Achenbach & Edelbrock, 1978) and statistical analyses of numerous third party ratings of deviant behavior (eg., Achenbach & Edelbrock, 1981; Achenbach & McConaughy, 1987), they have identified a number of narrow band behavioral disorders or behavioral syndromes (similar patterns or clusters of behavioral disorders) that vary somewhat as a function of the age of a child, their gender, and the person who is used as the rater (i.e., teacher, parent, self report). Consistently, though, across all children and ratings two broad and independent dimensions of disordered behavior are exhibited among children and adolescents: Internalizing and Externalizing behaviors.

> The "broad-band" grouping designated as Internalizing mainly involves problems within the self, such as unhappiness and fears. The broad-band grouping designated as Externalizing, by contrast, mainly involves conflicts with others, such as aggressive, delinquent, and overactive behavior. (Achenbach & McConaughy, 1987, p.33).

It appears that the externalizing dimension is more frequently displayed among all children and youth, that more males exhibit externalizing behaviors than females, and that more females exhibit internalizing behaviors than do males (Achenbach & Edelbrock, 1978).

Also through investigations of behavioral ratings of deviant behavior and the development of the Behavior Problem Checklist, Peterson and Quay (Peterson, 1961, 1965; Quay & Peterson, 1987; Quay 1979, 1983, 1989a) identified four major and stable factors of deviant behavior among this age group. Descriptions of the factors follow (Quay, 1989a, p.11-14).

> A dimension most reasonably labeled Undersocialized Aggressive Conduct Disorder has emerged almost without exception. . . associated behaviors are those generally considered as aggressive, disruptive, and noncompliant. . . It is also noteworthy that stealing has not been found at all central to this dimension. . . This pattern of Undersocialized Aggressive Conduct Disorder has a very firm empirical basis by virtue of its ubiquitous appearance and its well-validated, easily observable characteristics.
>
> A second pattern involving "externalizing" (Achenbach, 1966) deviant behavior has less frequently emerged but has been clearly empirically established (see also Loeber & Schmaling, 1985). In this pattern involvement with peers in illegal or at least norm-violating behavior is central. Its characteristics. . . considered from a developmental perspective, suggest that it is mainly a phenomenon of older childhood and adolescence. A label of Socialized Conduct Disorder seems most appropriate.
>
> A third syndrome, principally defined by problems in concentration and attention, impulsivity, lack of perseverance, clumsiness, and passivity, has also made a very frequent appearance (see Table 1.6). While "hyperactivity" as a behavior trait has appeared on this dimension, it is by no means central, and behaviors reflective of motor underactivity are more frequently associated. While the writer (Quay, 1979) earlier labeled this dimension as Immaturity, Attention Deficit Disorder now seems the most appropriate designation.
>
> The dimension we have now labeled anxiety-withdrawal-dysphoria is actually the second most frequently appearing cluster. It is defined by internalizing (Achenbach, 1966) types of behavior: anxiety, fearfulness, shyness, sadness, social withdrawal, self-consciousness, and crying . . .

While considerable discussion has been generated on these two different ways of considering deviant behaviors among school-age individuals (see Kauffman, 1989, p. 121-136) and clear differences are apparent in the way deviant behavior is viewed, it is apparent also that the two broad-band dimensions of externalizing and internalizing deviant behavior are consistent across both lines of investigation. Moreover, other researchers (eg., Parker & Asher, 1987) have used this dichotomy to conceptualize and analyze empirical data on SED subjects, finding significant differences between the community adjustment of these groups; thus, lending further conceptual and construct support to this fundamental way of conceptualizing deviant behavior. From these writings and data, it is clear that much more attention has been given in the professional literature to the externalizing rather than to the internalizing, student (Bullis, Bull, & Johnson, 1990; Walker & Bullis, in press).

If these two broad-band dimensions can be divided into the four primary factors proposed by Quay, it may be possible to tailor interventions to even more specific subgroups of the SED population (eg., August, Stewart, & Holmes, 1983; Henn, Bardwell, & Jenkins, 1980; Janes, Hesselbrock, Myers, & Penniman, 1979; Loeber & Schmaling, 1985a, 1985b) that presumably would be more effective than more treatments designed for larger, more heterogeneous groups. For example, while we should certainly intervene differently with a depressed (Anxiety-Withdrawal-Dysphoria in Quay's terminology) youth as compared to a delinquent youth (Socialized Conduct Disorder), we would also want to treat a delinquent youth differently than an adolescent considered as Undersocialized Aggressive Conduct Disordered, as there are data to suggest that the two individuals are inherently different and would respond to different types of interventions (Henggeler, 1989; Henn et al., 1980; Kazdin 1987; Loeber & Schmaling, 1985b; Quay, 1989b).

Unfortunately, it is too often the case that SED students are considered as homogeneous, or at least presented as such in research and program descriptions. Such an approach obscures important inter-subject differences, making it difficult--if not impossible--to develop potent curricula and service programs for student's unique characteristics and needs (MacMillan & Morrison, 1977). Further, the results of these investigations are difficult to generalize or understand in any logical way as the parameters of the samples are seldom specified in great enough detail to draw inferences about the type of student for whom a particular intervention is effective (Kavale, et al., 1986). As efforts are directed at the development and evaluation of work-related interventions for the broad population of SED students it will be critical to address the unique needs of the subgroups of adolescents to construct the best services possible and to verify for which groups they are effective or ineffective.

Data on Community Adjustment

Individual development and success is ultimately validated by long-term life adjustment. Moreover, the success, or lack of success, achieved by students in their transition from the school to the community can also serve as an index of program effectiveness and the basis on which to revise interventions to address critical student needs. Given these premises, it is crucial that a solid knowledge base be established on the SED adolescent's experiences in the community to drive program change and individual service provision. It follows, that the question of what outcome measures can be used to answer this question.

Wills' original concept of transition and the goal of transition for all students with disabilities emphasizes employment (Will, 1984, p.4).

> ...employment represents an important outcome of education and transition for all Americans. The goal of OSERS programming for transition is that individuals leaving the school system obtain jobs, whether immediately after school or after a period of post-secondary education or vocational services. Employment is a critical aspect of the lives of most adults in our society, whether their work involves highly paid career specializations, entry level jobs, or working in situations where ongoing support services are provided. Paid employment offers opportunities to expand social contacts, contribute to society, demonstrate creativity, and establish an adult identify. The income generated by work creates purchasing power in the community, makes community integration easier, expands the range of available choices, enhances independence, and creates personal status. Of course, this concern with employment does not indicate a lack of interest in other aspects of adult living. Success in social, personal, leisure, and other adult roles enhance opportunities both to obtain employment and to enjoy its benefits.

On the other hand, the emphasis given to employment in the transition effort has been questioned (Edgar, 1987, 1988; Halpern, 1985). Halpern (1985, p.482) discussed the need to conceptualize transition in terms of community integration instead of only employment.

> Two examples, one from common sense and the other from legislation, may help to illustrate the point. Consider the person who has a job, but constantly gets into debt over his head, fails to pay his bills on time, and does such a poor job of maintaining his apartment that the landlord resorts to eviction. Good vocational skills will not solve these problems, and vocational training would not be the correct way to address these problems. Other services with other objectives are required. Recent legislation has also supported the concept of different needs being addressed by different programs and services. For example, the 1978 amendments to the Rehabilitation Act authorized independent living as a legitimate agency goal to be addressed by a separate service delivery system under the auspices of the vocational rehabilitation program.

Thus, it makes sense that transition should be considered in terms of a broad life and community adjustment perspective encompassing social networks, community participation, and employment when assessing quality of life in transition. Moreover, for SED youth there are salient markers of pathology (emotional crises, incarceration, and hospitalization) that demand attention. It is beyond the purview of this monograph to review the voluminous literature reviewing predictive relationships between child characteristics, experiences, and programs, and the long-term adult adjustment of SED persons (cf. Parker, & Asher, 1987; Robbins, 1978). Yet is useful to examine some of the salient features of this literature. In addition, the few studies that present employment and transition data for SED adolescents and young adults are discussed in this section.

Child-adult Predictions

The following investigations are illustrative of the kinds of studies available to describe the complex relationships between child and adult psychopathology. While this review is by no means exhaustive of the literature, the findings provide a foundation to foster a basic understanding of the adult adjustment of these students. It should be cautioned that the bulk of these studies focus on males. There has been little research conducted on females, although there is some indication that this group is receiving increased attention (Gaffney & McFall, 1981; Henggler, 1989).

A now classic study by Cowen, Pederson, Babijian, Izzo, and Troust (1973) pointed to the substantial relationship between child and adult maladjustment. Almost all of the adults with emotional adjustment problems had problems as children. Yet, the corresponding relationship does not hold when looking forward from childhood to adulthood. That is, just because a child displays antisocial behavior does not guarantee that s/he will display antisocial behavior. Robbins (1978), in a summary of the frequently cited studies conducted by her and her colleagues, states that most antisocial children do not become antisocial adults, even though adult maladjustment virtually requires childhood maladjustment, evidence of a variety of antisocial behavior in childhood is predictive of adult antisocial behavior, and that the prediction of adult antisocial behavior is not influenced greatly by socioeconomic status. Comprehensive reviews of extensive numbers of studies conducted by Gerald Patterson and his colleagues at the Oregon Social Learning Center (Reid, 1989) and epidemiological investigations (Farrington, 1989; Loeber & Dishion, 1983) support the position that a child's socioeconomic status is not, in and of itself, related to adult antisocial behavior. Instead, it is clear that there is a strong and primary relationship between maladaptive child rearing and a dysfunctional family environment and the individual's maladjustment in adult life.

There are a number of studies that suggest that antisocial behavior, particularly overt aggressive behaviors, are relatively stable across a person's life. Olewus (1977) conducted an investigation in which he followed two samples of boys over a period of one and three years, respectively, in which the subjects' antisocial behaviors were rated on a regular basis by peer raters and then related to external criteria of teacher ratings and nominations of antisocial behavior. Correlations of the data across time revealed a relatively stable pattern of aggressive social behavior. Olewus (1979) also examined a series of studies on the stability of antisocial behavior in boys and found moderate correlations across childhood and adolescent behavior patterns. Loeber (1982) in another review of the literature concludes that there is "...support to the notion that youths whose early antisocial behavior is extremely frequent are at highest risk for becoming chronic offenders. Moreover, there is good evidence that youngsters who turn out to become chronic offenders start their antisocial behavior at an early age (p. 1442)." Interestingly, Loeber also found that the type of antisocial behavior engaged in by youth tends to change from preadolescence to adolescence, with the number of persons who engage in overt acts declining and the number of youth who engage in covert acts increasing. Other research supports the fact that early aggression is highly predictive of delinquency (Roff & Wirt, 1984) and adult maladjustment in terms of criminality, spouse abuse, traffic violations, and physical aggression (Huesman, Eron, Lefkowitz, & Walder, 1984; Mitchell & Rosa, 1981).

Finally, there are some data to suggest that specific types of deviant behavior vary in stability and that anti-social behaviors vary in the way in which they are exhibited. For example, sexual offenses appear highly resistant to intervention and tend to be displayed in an enduring pattern (Davis & Leitenberg, 1987). Conversely, boys who are hyperactive, but who do not exhibit conduct disorders are much more likely to outgrow the condition, as compared to hyperactive boys who are also conduct disordered. Loeber and Schmaling (1985a) conducted a meta-analysis of research findings to confirm that there is ample evidence to support the notion that antisocial behavior among male youth can empirically be considered in terms of three forms: covert (stealing), overt (fighting), and versatile (displaying both covert and overt social behaviors). Loeber and Schmaling also found that versatile antisocial youth scored higher across a number of measures of antisocial behaviors than did students considered as "pure" overt or covert offenders (1985b).

There are a number of studies indicating that emotional disturbances are related to deficits in social skills (Dishion, Loeber, Stouthamer-Loeber, & Patterson, 1984; Freedman, Rosenthal, Donahoe, Schlundt, & McFall, 1978; Gaffney

& McFall, 1981; Hazel, Schumaker, Sherman, & Sheldon-Wildgen, 1982), social cognition (Dodge, 1980), and deficits in social problem solving thinking (Chandler, 1973; Kendall, Dearddorff, & Finch, 1977; Lee & Prentice, 1988; Levinson & Neringer, 1971; Platt, Scura, & Hannon, 1973; Platt, Spivack, Altman, & Altman, 1974; Slaby & Guerra, 1988). Jones, Hesselbrock, Myers, and Pennimon (1979) found a single teacher-related item "fails to get along with other children" was closely related to a wide variety of adult behaviors. In a comprehensive review of the literature, Parker and Asher (1987) found "...general support for the hypothesis that children with poor peer adjustment are at risk for later life difficulties (p. 357)." The support was clearest for low acceptance and aggressiveness as predictors of dropping out of school and criminality. Parker and Asher also comment on the relationship of poor peer adjustment and occupational success.

> It is not difficult to imagine that children who have problems getting along with classmates might later have problems getting along with co-workers and supervisors. Thus, we might expect low-accepted children to fare relatively poorly in later interviews for jobs, to be less satisfied with their jobs, and to evidence poorer performance and attendance records (1987, p. 382).

In summary, while some externalizing adolescents will not exhibit long-term aggressive and antisocial behavior, overall it is clear that this general behavior pattern is enduring and relatively stable. The fact that the kinds of deviant behaviors engaged by this group tends to change over time is important and carries implications for treatment and prevention. Also, available data suggest that the family environment and social skills are central to adult adjustment, and social competence is related to employment tenure and success. In fact, the work setting is often intolerant of behavioral disturbances, which relates to the difficulty and few successful attempts at vocational training and placing SED youth in competitive employment.

Transition Studies

A most important transition question to be answered in the transition and SED field is what happens to SED youth at certain time intervals after leaving school? Unfortunately, there have been very few follow-up studies that track these youth after leaving school. In a recent investigation, Neel, Meadows, Levine, and Edgar (1988) surveyed a cohort of SED youth who had graduated from schools in the state of Washington. They collected employment and continuing education data on 160 young adults who they were able to contact. It was found that at the time of data collection 60% of the youth were employed and that 78% had been employed at some time since leaving school. At the time of questioning, 17% of the sample were attending some form of postsecondary education, a total of 31% were unengaged (not working or attending school), and 58% were living at home.

Neel et al. contrasted their findings for the SED subjects with norms they established with a comparable large sample cohort of nondisabled (ND) youth in Washington. The ND achieved a current employment rate of had 70%, and 85% had been employed at some time since leaving high school. A total of 47% were in postsecondary education and only 8% were unengaged. Sixty-six percent of the sample were living at home. Thus, the SED group were employed at a rate 10% less than the ND group, but were involved in postsecondary education at a much lower rate. Because of the educational variable, there was a much higher proportion of unengagement of the SED group. The Neel et al. study is therefore important because it presents norms on important variables while permitting contrasts with a normative group. However, it must be noted that the SED students in this study had graduated from high school. Although the dropout rates of students with disabilities is unclear, it is thought that the SED group has one of, if not, highest rate of leaving school before successful completion (Butler-Nalin & Padilla, 1989; Wagner & Shaver, 1989). Thus, this sample, consisting only of graduates, may be unrepresentative of the SED population at large.

The large-scale National Longitudinal Transition Study (NLTS) in progress (Wagner & Shaver, 1989) has collected data on a number of disabled youth in transition. In this study for the SED cohort of students who are one year out of school, only 50% of the youths were employed, a figure 10% below that reported by Neel et al. (1988) and probably due to the broader geographic representation of the group.

Kortering and Edgar (1988) in an examination of the transition experiences of all special education students who left 15 school districts in Washington between 1976 and 1984 examined a sample of 121 SED adolescents and young adults. They found that only 5% of this sample had any contact with vocational rehabilitation, around 50% were unemployed, and of those employed the majority found their jobs on their own or through a friend or family member. Two frequently cited studies have been conducted by Hasazi, Gordon, and Roe (1985) in Vermont and Mithaug, Horiuchi, and Fanning (1985) in Colorado. In these investigations SED youth are represented but for specific data for this group are not reported. In general, though, it appears that the subjects in these studies tended to find jobs on their own, did not use adult service agencies, if employed found jobs that paid a low wage, believed that special education did prepare them to work in the community, but that more training in social participation in the community and job search methods would have been helpful in their school-to-community transition. Hasazi, et al. found that participation in paid employment while in high school was correlated to successful employment after leaving high school in a statistically significant way.

In one of the few studies focusing solely on the vocational adjustment SED adolescents, Cook, Solomon, and Mock (1988) followed 30 youth who had been placed in competitive jobs as part of a supported work project. It was found that on the average subjects in this group held their first jobs for 125 days and then moved to a second job that they held for 109 days. These job changes were not necessarily to move to better positions, but rather related to boredom or the urge to experience another type of work. Interestingly, those youth identified as schizophrenic were more stable on their jobs and considered better workers than those students considered as acting out or aggressive, as the behaviors of this latter group of students do not match the demands of the work setting.

Follow-up data collected from The Career Ladder Program (CLP) has relevance to SED students (this program is described in detail in a later section). Although primarily serving an LD population, about 10% of the 100 graduates has serious emotional disturbances. Siegel, Robert, Greener, and Gaylord-Ross (1989) had graduates of this vocational training program provide retrospective data on their lives at six month intervals since graduation. Siegel et al.

found that the group leveled off at an 80% rate of current employment. About 27% of the group attended postsecondary education; and only 7% were unengaged. The CLP attempted to place its students in upwardly mobile positions, rather than entry level, dead end positions. In this regard the CLP participants reported many more positive than negative changes in their jobs. Financially, the CLP youth averaged $5.80 per hour in their jobs. This compound favorably to the NLTS wage of $4.30 per hour for LD youth (Wagner, 1989). Siegel et al. then made an argument for a safety net of vocational services for mildly handicapped youth. That is, they infer that the superior employment statistics for the CLP participants is due to the ongoing vocational support services provided from tenth grade through the postsecondary years. Thus, the CLP data usefully provides wage and longitudinal data for a group of students similar to the SED population and supporting the case that such a program and research methods could be applied to SED students as well.

Finally, there are isolated studies that suggest that vocational interventions foster positive psychological adjustment on psychometric measures shortly after treatment (Massimo & Shore, 1963) and at 10 months post-treatment (Shore, Massimo, & Mack, 1965). Further, there is some evidence that vocational preparation may influence "at risk" students to complete school. Thornton and Zigmond (1987a, 1987b, 1988) found consistent correlation between high school completion and vocational education among groups of LD students. Bishop (1989) in a review of the regular vocational education literature notes similar findings and states that appropriate vocational training can have a strong influence on at risk students' ultimate occupational success.

A second transition subject to receive attention relates to the network between schools and community-based agencies (eg., DVR) serving SED students. In studies from Washington, Maddox and Webb (1986) and Maddox and Edgar (1988) found significant problems in the transition of students in juvenile correctional institutions to home, schools, and with human service agencies. In general, these problems related to a lack of awareness of the functions and responsibilities among involved parties. Maddox and Edgar (1988) identified seven key issues that should be dealt with to affect a positive transition experience: program awareness, eligibility and program entrance requirements, exchange of information and communication, program planning before transition, feedback and follow-up after transition, written procedures, and parent involvement. Maddox and Webb (1986) implemented a transition planning program selected sites and programs in Washington and found that procedures of this type did, in fact, improve the transfer of students from correctional agencies to public schools. Last, Kortering and Edgar (1988) found that few SED students included in their study had any contact at all with the DVR agency in Washington, a finding that is inconsistent with federal initiatives to serve LD students--including those with behavioral problems and certification (Billert & White, 1989).

Vocational Assessment

It is apparent from the research reviewed in the previous section that many adolescents and young adults with the SED label do not go on to achieve success in vocational and community integration endeavors. Consequently, It is essential that vocational programs for SED adolescents be guided by and based on clear and accurate assessment information. Simply, data of this type should identify the student's work-related strengths and weaknesses and provide a foundation for instruction, monitoring of learning, and a guide to job placements. This section begins with a description of "traditional" vocational evaluation. Second, a theoretical model of job-related social behavior is presented. Third, guidelines are presented for conducting comprehensive vocational assessments of SED students in school-based vocational training programs.

Traditional Vocational Evaluation

Vocational evaluation (Pruitt, 1976), has its roots within the rehabilitation field. It has been defined as:

> A comprehensive process that systematically uses work, real or simulated, as the focal point for assessment and vocational exploration, the purpose of which is to assist individuals in vocational development. Vocational evaluation incorporates medical, psychological, social, vocational, educational, cultural, and economic data in the attainment of the goals of the evaluation process (Vocational Evaluation and Work Adjustment Association, 1975, p.86)

The primary objective of traditional vocational evaluation procedures is to match an individual with a specific job or to recommend that the person enter training for a particular career. This type of evaluation is typically implemented within a rehabilitation facility or vocational evaluation center during a specific period of time (eg., 4 to 6 weeks). This focus and technique is understandable as rehabilitation has historically been concerned with adults, who may have vocational experience and the wherewithal to make career decisions or to be placed in a job or job path.

The type of assessment tool that is paired most often with vocational evaluation is the commercially available work sample (eg., Singer Vocational Evaluation System, McCarron-Dial Work Evaluation System, the Tower system), or locally developed work samples that are developed to represent jobs available in communities. Essentially, these instruments represent facsimiles or analogue interpretations of work environments and their demands (VEWAA-CARF Vocational Evaluation and Work Adjustment Standards, 1975). For example, a cubicle with a particular type of job (welding) may comprise part of a work sample system. The subject being assessed is asked to work at the sample while his or her performance is monitored. In some instances these exercises may be completed in a few hours, while in other cases the exercise may run for more than a day. Additionally, the process will also utilize multiple assessment instruments and procedures (psychometric tests, aptitude and achievement tests, vocational interest inventories, and situational assessments).

However, the "traditional" approach is ill-suited to the instructional needs of school-based vocational programs and the developmental nature of students' learning in these programs for three reasons. First, the primary goal of vocational instruction is promote the growth and development of the student over time. As students are likely to, and undoubtedly will, develop work skills and expand their vocational horizons as the result of exposure to various work experiences, they do not constitute a fully formed "product" whose characteristics and potential can be measured through one static assessment procedure. It follows that traditional vocational evaluation, focusing on the individual at one point in time, will be inappropriate to reflect the student's growth from learning, nor will such data taken have utility for measuring the direction and structure of the vocational education intervention over time (Cobb, 1983; Cobb & Lakin, 1985). In line with this point, Sitlington, Brolin, Clark, and Vacanti (1985) in the position statement of the Council for Exceptional Children's Division on Career Development on career/vocational assessment state:

> The goals of this process should be specifically geared to providing the information needed to make decisions in all areas of career programming; these decisions may be related to developing an individualized program (curriculum content) for the handicapped learner or determining what assistance the learner needs to succeed in an ongoing program (p.4).

Second, attention must be given the standardization and psychometric properties of the instruments used in the vocational assessment effort. There has been little empirical work directed to the development and standardization of vocational assessment instruments for SED students, thus most of the tools used in this type of evaluation will lack desired item statistics, reliability, and validity (DeStefano, 1987).

Finally, caution should be exercised over the relevance of data from psychometric tests to the vocational education of SED students. Questions have been raised about the utility and applicability of these measures in measuring the vocational capacities and skills of disabled individuals (Frey, 1984). Although such discussion has not been applied specifically to SED students, Cohen and Anthony (1984) have examined the relationship of psychometric data (i.e., intelligence and personality test results) to the rehabilitation outcomes of adults with various psychiatric diagnoses. They made found that this type of information was not related to vocational attainment or rehabilitation success, and argue the assessment effort should focus on subjects' functional skills instead of abstract psychometric constructs.

Given the above information, it may be concluded that school-based vocational assessment for SED students should not be structured along the lines of traditional vocational evaluation procedures (Hursh & Kerns, 1988). The question then becomes, how should such programs be designed? The next sections address this topic.

Theoretical Model

Numerous authors (Cobb & Lakin 1985; Ianacone & Leconte, 1986; Porter & Stodden, 1986; Stodden & Boone, 1986; Stodden & Ianacone, 1981; Stodden, et al., 1987).) suggest that the most appropriate vocational assessment procedures for students in school settings are informal methods that mirror curriculum demands at key decision points. Of course, if assessment is tied to the vocational curriculum, it is mandatory that the crucial content to be taught in the vocational program can be identified.

Discussion of critical work-related variables for disabled persons have tended to be either been general in nature (Foss, Walker, Todis, Lyman, & Smith, 1986) or have focused on individuals with mental retardation (Chadsey-Rusch, 1986; Salzberg, Lignugaris/Kraft, & McCuller, in press). However, one project (Bullis, 1989; Fredericks & Bullis, 1988) is being conducted presently to explicate the important aspects of job-related social behavior specific to SED adolescents. From these references a model of vocational content relevant to both the assessment and vocational education of SED students is discussed below and presented pictorially in Figure 1. The left hand side of the figure provides a listing of the four content areas of primary concern for the vocational assessment of this group.

PLACE FIGURE 1 HERE

In order to prepare students to be successful in the employment setting interventions should be structured to address four broad domains: the worker's vocational interests and needs, task performance, work adjustment, and social/interpersonal behavior on the job. First, in order to match the individual with a job that she or he will enjoy and hopefully be successful at, it is necessary to analyze their vocational interests and requirements for what will be gained from the job (Loftquist & Dawis, 1969). Second, it is mandatory for a person to maintain and progress in the employment arena to be able to perform the required job tasks in a satisfactory manner. Such performance can be considered in terms of the individual's physical and cognitive abilities, general work skills, and specific job skills. Essentially, the person's physical and cognitive abilities are the foundation of his or her work potential and in one way or another, dictate the kind of work in which one may be involved. General work skills refer to competencies that may be required in numerous jobs and constitute task clusters (eg. the ability to type, to use tools, etc.). To be successful on a specific job a worker must be able to exhibit the necessary prerequisite skills for that particular job. Third, work adjustment is composed of the formal and informal work rules that dictate how an employment setting operates. These skills are peripherally associated with the production requirements of the job and conform to fundamental notions of how an employee should present him or herself at work. Aspects of work adjustment include appropriate dress and grooming for the specific job, exhibiting enthusiasm and motivation to work, following safety regulations on the job, being punctual in coming to work and regular attendance, and demonstrating sufficient attention to the job task. Several studies provide evidence that the primary correlate of SED workers' success or lack of success in job placements relates to their level of social/interpersonal competence in the employment setting, i.e.,the ability to "get along" with others on the job (Anthony, 1979, Dellario, Goldfield, Farkas, & Cohen, 1984; Griffiths, 1973, 1974; Hursh, 1983; Watts, 1978). Reviews of the literature on social competence in employment for workers with handicaps by Chadsey-Rusch (1986), Foss et al. (1986), and Salzberg, et al., (in press) specify three general categories of job-related social behavior: Disruptive behavior, Supervisor relations, and Co-worker relations.

Disruptive behavior refers to bizarre, emotional behavior that may be aggressive or extremely withdrawn, it also includes stealing and sexually deviant behavior. These kinds of responses may have a long-standing history or be associated with transient stress or specific environmental stimuli.

Supervisor relations refers to the way in which the worker interacts with the work supervisor. Content areas include the ability to respond appropriately to criticism or correction, being able to request information or assistance to complete a work task, being able to follow work-related instructions, and being able to ask for time off or quit a job.

Co-worker relations refers to the way in which the worker interacts with other workers in the employment setting. Specific to the production arena three content areas are identified: exhibiting cooperative work behavior, being able to handle teasing or provoking from other workers, and being able to resolve personal concerns. Foss et al. also emphasize the importance of relationship building skills,i.e. the ability to develop friendships and supportive relationships with co-workers.

Unfortunately, these descriptions are too broad to be of much help in specifying the exact kinds of social problems experienced by SED adolescents and young adults in work placements. Unless we know what specific problems to address when teaching SED students how to behave on the job, we may not focus on issues that are, in fact, encountered and/or important (Freedman, Donahoe, Rosenthal, Schlundt, & McFall, 1978; Gaffney & McFall, 1981; McFall, 1982; Romano & Bellack, 1980; Strain, 1982). Accordingly, one investigation of which we are aware is currently examining the specific social problems experienced by SED adolescents and young adults in the work place (Bullis, 1989; Bullis & Fredericks, 1988). The primary intent of the project is to develop both knowledge-based and performance-based measures of job-related social behavior for SED adolescents and young adults. Thus, a major focus of the initial part of this research effort has been to identify and describe the specific social problems experienced in the work place by members of this population.

To accomplish this task the project is following the Behavioral-Analytic Model of test development (Goldfried & D'Zurilla, 1969). This technique requires that social problems be examined in the context in which they occur (i.e., the work setting), and to involve members of the target population (i.e., SED adolescents) and significant others (i.e., work trainers and employers) in the specification of test content. To gain such information it was decided to conduct extensive interviews with members of each respondent group. Accordingly, four structured interview protocols were developed to be administered to SED students, work trainers, and employers. Each protocol consisted of 16 questions representing the three broad areas of job-related social behavior noted previously (supervisor relations, co-worker relations, and disruptive behaviors). Each of the questions across interview forms were similar in content and purpose (the "guts" of these questions are presented in Figure 2), but that were worded differently for each audience. For example, Question #9 on the student form was worded "Have you ever had any problems at work when a co-worker made fun of you or teased you? If yes, Tell me about the specifics of those problems." The comparable question on the employer and work experience supervisor form was worded as follows "Have any of the students labeled as SED with whom you have worked, ever had problems on the job because a co-worker made fun of them or teased them? If yes, Tell me about the specifics of those problems." The questions were posed sequentially, with all responses being recorded by the interviewer in the form of a short vignette. The interviews each took roughly 45 to 80 minutes to complete.

PLACE FIGURE 2 HERE

Fifty eight SED adolescents with competitive work experience, 11 work trainers, and 12 employers and co-workers were administered the interviews. The number of social problems generated under the questions ranged in frequency across questions from 31 to 117, with a total of over 1100 social problems generated across all 16 areas of questioning. Examples of three of the social problem vignettes that were generated are presented in Figure 3.

PLACE FIGURE 3 HERE

Next, this initial list of problems was reviewed and edited to create a representative sampling of social problems SED adolescents experience in job settings to use as the content foundation and blueprint for the rest of the project. The problems were examined to identify duplicates, issues that didn't fit under particular subject areas, or that were not social problems (eg., related to work performance or work adjustment). In reviewing the social problems listed under each of the 16 questions, or content domains, it became clear that the problems in each domain could be categorized further into clusters of problems or subdomains. For each question, then, naturally appearing subdomains of similar content were identified by project staff. After this was accomplished, each social problem on the edited list was coded by three project staff according to the major domains and the subdomains. Thus, each vignette was categorized under a major area (domain) of job-related social problems and further still within a more specific--yet related--category of similar problems (subdomains). The inter-judge reliability of categorization of the social problems, based on calculation of Ebel's Intraclass Correlation Coefficient for each of the 16 questions, ranged from .60 to .90., indicating adequate to above adequate agreement among the raters, and supporting the notion that the initial content framework was a valid--albeit preliminary--categorization of the kinds of social problems SED adolescents and young adults experience in the vocational arena. This social skill taxonomy is somewhat lengthy and is presented in Appendix A.

During the rest of the project efforts will be made to specify those specific problems that are both important and prevalent in work settings through a national survey of service providers, to identify the kinds of responses these students could make when faced with these problems, to identify the most correct response to each problem from the perspective of competitive employers, to integrate this information into the assessment instruments, and to standardize and validate the measures. Knowing how to act or respond in a certain situation is most probably a necessary prerequisite to performing the correct behavior. It is, however, entirely possible that a person may know what to do in a situation but for some reason not perform in an appropriate manner. It is then necessary that the vocational assessment process encompass both knowledge-based and performance-based assessments (Bullis & Foss, 1986; Gresham, 1986; Kendall & Braswell, 1982; McFall, 1982). At this point then, it is anticipated that one of the assessment tools will be designed to measure a subject's knowledge of social skills in the work place through an individual, clinical interview and the second will be constructed for use by service providers to rate student's actual social performance while at work. Ultimately, these instruments will be of benefit to practitioners in the identification of the social job-related skills of SED adolescents.

Of course, these measures will not influence professional practice or be available immediately, and it is necessary to conduct vocational assessments of SED students to structure effective vocational education programs. Accordingly, the following section offers some suggestions for practice.

Assessment Guidelines

Referring back to the top of Figure 1, it may be seen that the vocational assessment should be considered as a longitudinal, developmental process and conceptualized in terms of four progressive categories. First, it is important to gather data for basic screening purposes in order to analyze the students physical, emotional, and intellectual capabilities and to establish a rough gauge of his or her work potential. Second, it is necessary to assess the student's knowledge and awareness of work as a starting point in the instructional process. Both of these first two phases may utilize psychometric measures, achievement tests, and paper and pencil tests of functional skills (eg., work adjustment skills) to gain perspective on the individual's basic skills. In most cases the purpose of the assessments should be to establish instructional guidelines on generic job skills, and baseline information on the student's raw and untested job potential.

Third, the student should initially, but only as the beginning step in the vocational training process, be placed on various analogue work sites (eg., commercially and locally developed work samples) and sheltered job sites (eg., make work in school or classroom settings) to analyze basic job capabilities and potential, foster multiple work skills, expand work interests, and promote the generalization of these skills to different environments (eg., accepting criticism and correction from more than one supervisor). Fourth, it is absolutely critical that student's be placed in competitive or quasi-competitive jobs in the community as soon as they are ready, to foster their vocational development and to gain an accurate picture of what his or her real job skills are in actual work settings and under those pressures and conditions. These phases should emphasize performance data derived from ratings and behavioral observation. These data should be utilized to shape eventual job placement and continuing education decisions that will be made by the student and the work-experience coordinator.

In line with this approach, several general guidelines should be followed. First, any vocational assessment system must analyze not only the individual but the vocational environment, as well. These efforts must focus on the kinds of jobs that are available and their respective demands (e.g., what one has to do to explain the job) and rewards (e.g., pay). In addition, there is a "tolerance" factor among employers that seem critical in job placement. That is, some employers are more apt to accept employee differences and/or more willing to work to accommodate the shortcomings of some workers. At present we do not know how to quantify this variable, but this flexibility is crucial to note and gauge in some manner for this population, as employer support and flexibility logically are related to job success.

Second, psychometric assessment tools (IQ tests, personality tests) have only peripheral utility in the vocational assessment exercise and should not be used to make major decisions about the work skills of SED students. They may be used as base measures and may give some relevant data to augment the overall process. For example, IQ information and personality measures should be employed to gain a rough idea of a student's raw skills, but as stated previously these results have weak relationships with success in job placements. Third, structured interviews and observations of the student on the job can assist in identifying their requirements for work, their likes, and their dislikes. Of course, it must be noted that adolescents, particularly adolescents who have minimal work experiences, are likely to change their work goals and desires many times as part of their development and exposure to different occupations. Thus, it is necessary to conduct this kind of evaluation periodically to document changes due to maturation and experience.

Fourth, most commercially available work sample systems do not possess sufficiently strong psychometric properties for use with in school-based assessment programs. Of course, it is possible that as the available work sites in a region become clear, to be able to identify components of these systems that match these jobs and to develop locally based norms for these tools. For example, it may be discovered that a particular work sample system is a reasonable likeness of a production job in a particular town. To establish initial criterion levels of performance on this task, workers from these jobs can be administered the sample. As students are tested on the sample it will also be possible to compare student performance to worker norms to gauge the potential of students to perform this kind of job. Similarly, after identifying available jobs in a community, it is also possible to construct and standardize work samples that reflect the composition of those specific jobs and their requirements. However, while work samples can be used as an introductory assessment tool, they must not be viewed as an end unto themselves. There are simply too many variables associated with the job setting that cannot be reproduced in an analogue situation and there is no one instrument that should be believed in vocational assessment.

Fifth, multiple measures should be used in each of the four assessment phases and it is also important to gather data from multiple informants (Achenbach, 1985; Campbell & Fiske, 1959; Kazdin, 1979) to examine situations from several different perspectives. Work supervisors, physicians, co-workers, family members, and other teachers may all supply important information to the student's vocational assessment.

Sixth, the bulk of the vocational assessment enterprise with SED adolescents should be composed of situational assessments (Hursh & Kerns, 1988). In this technique the client is placed in job situations and then his or her work skills and behavior are observed and measured (Kuhlman, 1975; McCray,1982; Pruitt, 1976).

> The purpose of situational assessment is to systematically observe the individual's performance in relation to the characteristics of the work environment, and to systematically adjust work characteristics (tasks assigned, relations to others, amount and type of supervision, production demands) in order to identify the social and environmental factors that may promote or hinder work performance... Situational assessment is not only a process of observing behavior, but is also a dynamic process of systematically altering work characteristics to observe work adjustment and performance. (Hursh and Kerns, 1988, p.156)

Data from situational assessments may be gathered from rating scales of work behaviors completed on a frequent basis by work supervisors, rating scales of student's behaviors completed by co-workers or teachers, and precise behavioral observations the student performing on the job. An example of a segments of such a rating scale is provided in Figure 4 (Nishioka-Evans & Fredericks, 1987).

PLACE FIGURE 4 HERE

In summary, the vocational assessment of SED students should focus on the content and skills workers must exhibit in the work place. Data should be gathered to both structure and evaluate the actual impact of the vocational education and community-based training program. Moreover, it is clear that special attention should be paid to the assessment of job-related social behavior, as these skills are critical to the vocational success of SED adolescents.

Job-related Social Skills Training

The Education for all Handicapped Students Act (P.L. 99-142) calls for the placement of disabled students in the least restrictive environment. The emotionally disturbed group appears to be the one population which is not being increasingly served in integrated settings. In terms of the least restrictive environment, vocational placement may be the most challenging domain. That is, because of a person's behavioral disturbances, she or he might be a most unlikely candidate for job hiring or retention. Yet, there is an emerging line of work that addresses the vocational training and placement of persons with emotional disorders. The focus of these few efforts emphasize job-related and community-based social skill training, as the research reviewed in previous sections strongly suggests that SED persons primarily lose their jobs to antisocial outbursts and/or absence of positive social skills.

It would seem obvious that the social skills of emotionally disturbed persons would be critical to their vocational success. Just how important they are has not been accurately determined and relatively little work has been done to train social skills in vocational settings. Let us now examine the characteristics and status of social skills in vocational contexts.

Training and Outcomes

The absence of positive social behaviors and the appearance of antisocial behaviors makes one a poor candidate for employment. A record of antisocial acts like theft and assault will often limit one's chance of being hired. Also, behaviors like theft are emitted covertly and somewhat infrequently, so they are hard to treat and manage. Violence and thievery are highly insulting to the work environment and will usually lead to immediate termination. Thus, because the emotionally disturbed person is a poor candidate for hiring and retention, there has been relatively little research done on social skills in vocational contexts.

Some social skills research has focused more on the earlier stages of job procurement. The first stage of job procurement deals with finding a job. Hasazi, et al. (1985) have found that mildly handicapped youth (including emotionally disturbed students) frequently find jobs through their family-friends network or on their own. Although job placement services have an effect, they do not result in obtaining nearly as many jobs as through leads from family and friends. Still, given the high unemployment rate of mildly handicapped youth, strategies are needed to connect people with jobs. Azrin and Besalel (1980) have developed the now well known Job Club program. Job Club teaches the participant a variety of job procurement skills. The behaviorally-based procedure teaches the individual to identify particular jobs through newspapers and phone calls. Through continuous, protracted contacts, a list of jobs is assembled and interviews are established. While the approach has been used with great success with chronically unemployed, low functioning persons (Azrin & Philipp, 1979) and seems well suited to the SED population, there has been little research to apply Job Club procedures directly to this group.

A second job procurement skill, job interviewing, also has been taught and researched with emotionally disturbed individuals. Job interviewing is a social skill that involves a dyadic interaction between the personnel interviewer and the job seeker. Kelly has developed an individual (Furman, Geller, Siman, & Kelly, 1979) and a group (Kelly, Laughlin, Claiborne, & Patterson, 1979) training procedure for former psychiatric patients. The training procedure uses the typical behaviorally-based components of social skill training (SST). That is, the trainer instructs and models the desired behaviors, the participants role play or rehearse the stipulated behaviors, and finally feedback (information and/or reward) is provided after the rehearsal. In both studies three behaviors were targeted for training: providing information, expression of enthusiasm, and questions to the interviewer. Each of the behaviors were successively trained with a multiple baseline design. Before training, each of the behaviors appeared at a near zero rate. After the onset of training the appearance of the targeted behaviors increased dramatically.

In SST, the importance of training behaviors during a role play is secondary to having these behaviors generalize to a real setting. In job interviewing, SST it would be critical to produce generalization from the role play to real job interviews. To approximate this situation, Kelly and his colleagues recruited actual personnel interviewers. Unstructured generalization probes simulated an actual job interview. Pre-and post measures were taken to the participants' performance. In general, the participants' performance improved substantially from pretest to posttest. This change was noted in both the specific behaviors trained (e.g., enthusiasm) and in more global, social validity ratings (e.g., ambition, speech fluency, context appropriateness, and likelihood of being hired). The ultimate social validity criterion in job interviewing training is whether the participant obtains employment. In Kelly's group instruction study five of the six participants obtained jobs. In Kelly's individual instruction study, two of the three participants became employed. Thus, Kelly and his colleagues have empirically demonstrated a relatively brief and effective training procedure for job interviewing social behaviors.

In addition to leading job procurement skills, some work has been done in training social skills that will be needed in actual encounters on the job. Salzberg and his colleagues conducted a series of studies to demonstrate the acquisition and generalization of vocational-related social skills. In the first study, Warenfeltz, Kelly, Salzberg, Beegle, Levy, Adams, and Crouse (1981) taught four behavior disordered youth to make appropriate responses to instructions, (e.g., "put away those tools"). The student had to respond appropriately in a verbal and motoric fashion, and to avoid negative verbal responses like whining or refusing. A first "didactic" training condition taught the students to distinguish, define, and identify appropriate and inappropriate work-related social behaviors. Data was simultaneously collected in a simulated work setting in the school. Although the students learned each of the trained behaviors, they failed to generalize appropriate responses to instruction the simulated setting. Next, a role-play and self-monitoring training condition was implemented. The students and teacher role played vignettes that could occur in work settings. In addition, students self-monitoring their social responses in the simulated setting. That is, students rated their social responses to the work supervisor. After successful acquisition, the role play and self-monitoring condition produced generalization of appropriate responses to instruction to the generalization setting. Impressively, response generalization was rated to the untrained behavior of appropriate response to critical feedback.

A subsequent study by the Salzberg group (Kelly, Salzberg, Levy, Warrenteltz, Adams, Crouse, & Beegle, 1983) similarly trained four behaviorally disordered youth to make appropriate responses to instruction. The investigation attempted to partial out whether role playing or self-monitoring was casual in producing generalization. First, a role play only condition was introduced. Although the students acquired the social discrimination responses, they failed to display appropriate responses to instruction in the simulated, school generalization setting. Subsequently, a role play plus self-monitoring condition induced both acquisition and generalization. The Salzberg studies are unique and impressive in that they identified the critical training conditions to produced generalized social responding among behaviorally disordered youth. The studies are limited in that they were not validated in real work settings.

One study, though, by Breen, Haring, Pitts-Conway, and Gaylord-Ross (1984) taught a number of social behaviors in an actual work setting. A group of four seriously emotionally disturbed-autistic youth had been working in a nursing home and a restaurant. The SST attempted to teacher them a number of social behaviors in the breakroom of the workplace. Such behaviors included initiating a conversation, making small talk, and offering co-workers coffee or sugar. A training procedure used nondisabled high school peers to didactically role play the social exchange with the autistic youth. A script of the sequence of social behaviors in a typical exchange was task analyzed and rehearsed. Training took place in the same break setting, as the generalization was across persons (nondisabled student peers to nondisabled adult co-workers) and not settings. Breen et al. investigated the number of training peers required before generalization occurred with co-workers at breaktime. There was no consistent finding. One autistic student needed one peer trainer, two students required two peer trainers, and a four needed three peer trainers before generalization occurred with co-workers.

Two programmatic lines of research examined the effects of SST with the general social behavior, skills with great applicability to work and community settings, with externalizing youth. In a series of studies in England, Spence and her colleagues investigated SST procedures and the effect of the training on adjudicated and incarcerated adolescent boys. In an initial effort to identify key skill deficits, Spence (1981) conducted short (5 minute) videotaped interviews with 70 subjects. Each of the boys were asked standard questions regarding school, life, hobbies, and career aspirations. Judges then rated each of the video interviews on 13 previously identified social skill variables (eg., gestures, smiling, eye contact, amount spoken, interruptions, questions, initiations) and then rated each boy on four 10 point scales relating to their perceptions of the student based on the interviews: overall friendliness, anxiousness, general social skills, and employability. Measures of eye contact and verbal initiations were correlated to all four of the global ratings, particularly to employability. Other behaviors that were correlated to employability ratings in a statistically significant fashion included amount spoken, questions asked, interruptions, and latency of response (this last skill area was negatively correlated to the rating). In sum, these results suggest that social skills for different content areas vary, but that these behavioral competencies can, and should, be identified to focus training and foster an effective intervention.

Spence and Marziller examined both the short term and long term effects of

SST on male offenders. In the study on the immediate effect of SST on the social behavior of five adolescent males (Spence & Marziller, 1979), behavioral skill deficits were identified for each of the boys (eg., seconds of eye contact, fiddling movements, head movements, questions) and then interventions were administered for each using instructions, modeling, role playing, videotaped feedback, target setting and social reinforcement. A multiple baseline design across behaviors was used to examine the causal effect of the intervention and personal and third party ratings, coupled with observational ratings of the specific behaviors on videotape interactions between the boys and the trainer, were used as the dependent measures. Overall, it was found that eye contact and verbal behaviors were amenable to change, but that listening behaviors were much harder to affect. For subject's behaviors that could be improved, these behaviors were maintained at a two week, post-intervention follow-up.

In the second and larger study, Spence and Marziller (1981) implemented an SST intervention with 76 adolescent, male offenders. Participants were assigned to one of three groups: SST, placebo control, or no treatment control. The SST intervention consisted of 12 1-hour sessions. Behaviors that were taught were discrete social skills (eg., eye contact) or more complex skills (eg., dealing with bullying, interacting with police, making friends). Dependent measures included a staff questionnaire of each individual's social functioning, a self-report questionnaire, and behavioral observation. A multiple baseline design across discrete behaviors was used to examine the effect of the intervention on these skills, and questionnaires were administered pre-and post-intervention to identify differences in social performance among the three groups. For the SST group it was found that it was possible to affect change in most of the social skills that were trained and that this behavioral improvement was maintained in a three month follow-up. Comparisons among the three groups at follow-up revealed that the SST group outperformed the other two groups on performance of the basic, discrete social skills. However, staff and social workers' questionnaires on each boy's friendliness, social behaviors, school and family relationships, anxiety and employability, and self reports of offending and convictions, demonstrated no differences among the groups. The authors conclude that SST in isolation may have limited value and that the procedure should be considered as part of a broader approach (a group home approach with multiple interventions).

Hazel and his colleagues (Hazel, Schumaker, Sherman, & Sheldon-Wildgen 1981) developed a comprehensive curriculum package to train eight broad areas of social skills for learning disabled and antisocial, delinquent youth: giving positive feedback, giving negative feedback, accepting negative feedback, resisting peer pressure, negotiating conflict situations, following instructions, conversation and personal problem solving. Through a Behavioral Analytic process (Goldfried & D'Zurilla, 1969) specific problems within these areas were identified and important, discrete skill components, central to the successful social skill performance, were delineated (eg., face the person, keep eye contact, ask if you can talk, tell the person how you feel). This content forms the basis of eight behavioral checklists that reflect skills critical in each of the eight domains. The curriculum uses a structured learning approach in conjunction with videotapes demonstrating social problems and their resolution.

Three preliminary studies of the skill training procedure provide evidence that the intervention is effective for externalizing, court adjudicated, and delinquent male and female youths (Hazel, Schumaker, Sherman, & Sheldon-Wildgen 1981, 1982; Schumaker, Hazel, Sherman, & Sheldon, 1982). In each study externalizing participants improved either on pre-post-test comparisons or on multiple baseline designs across behaviors. Moreover, behavioral changes were durable, maintaining is one study for an eight month time period (Hazel, et al., 1982), and evaluation of the training by participants and probation officers was positive.

Finally, several other studies support the notion that SST can be used with emotionally disturbed adolescents in more structured settings. For example, SST has been used to successfully modify aggressive behavior among adolescents in psychiatric hospitals (Elder, Edelstein, & Narick, 1979); train appropriate social behavior among incarcerated adolescent boys in a custodial institution (Ollendick & Hersen, 1979); control anger among institutionalized juvenile delinquents (Schlichter & Horan, 1981); and promote social interaction skills of emotionally disturbed adolescents in school settings (Friedman, Quick, Mayo, & Palmer, 1983).

Other investigations, focusing on perceived social/cognitive deficits of externalizing, aggressive adolescents (Dodge, 1980, 1985; Platt, Spivack, N. Altman, & D. Altman, 1974; Slaby & Guerra, 1988; Spivack, Platt, & Shure, 1976) have focused on the training of roletaking behaviors (Chandler, 1973), cognitive strategies (Foxx & Bittle, 1989; Sarason & Sarason, 1981), moral reasoning (Arbuthnot & Gordon, 1986; Niles, 1986), and a combination of behavioral, cognitive and moral reasoning (Goldstein & Glick, 1987). Overall, studies using this social/cognitive approach were effective to some degree and are certainly reflective of an emerging trend among social skill instruction in special education (Harris, 1982) to emphasize cognitive strategies and social problem solving methods (D'Zurilla, 1986; Meichenbaum, 1977; Spivack, et al., 1976) to foster skill acquisition and generalization of learned behaviors.

In summary, the studies reviewed in this section indicate that SST techniques can be effective with SED adolescents. The bulk of this research has focused on externalizing students and has been geared toward general community adjustment skills, and not specifically to vocational or living settings. Data has not yet been amassed, however, that firmly support the position that SST can make a substantive change in the SED adolescent's actual work and living experiences. So, while the results from the studies reviewed here are promising, it is apparent that this type of inquiry and intervention is in a very early stage of development. Much more work is necessary to identify critical functional transition content (those key vocational and independent living social behaviors), examine and delineate powerful instructional techniques, develop training strategies that utilize the natural environment as a training component (eg., the work setting), and to demonstrate the long-term effect of SST on social skills and overall adult adjustment. Issues that should be addressed in this future work are discussed next.

Future Directions

While little SST research and demonstration has been done in real work settings to date, we should expect a growth in this field, as social skills are critical to successful job retention, indicate a satisfactory work life, and mediate to some degree social functioning in the community. It is our opinion that at least two areas need to be addressed to improve SST in the near future.

The first area relates to the way in which social skills are trained. Past SST work has typically been behavioral component training. That is, antecedence modeling, response rehearsal, and consequent feedback have allied SST closely with the principles of applied behavior analysis. Trower (1978) has suggested that a "process" type of training should produce better generalization. Process SST emphasize the use of cognitive activities. These cognitive processes include decoding the social context, delineating and deciding upon behavior choices, and self-monitoring and self-evaluating one's performance. To illustrate what a cognitive-behavioral training package may look like, a hypothetical example follows.

When training SED students to request assistance from a vocational supervisor the intervention would begin with discussion of the importance of such behavior and a call for participants to volunteer instances when they have asked supervisors for help or when they have had problems making such requests. "real life" problems volunteered by the participants could be used to focus training. The trainees would be introduced to the cognitive and one of the social problems would serve as a practice situation where the interaction is role-played; depending on the group the role-play may be conducted by the trainers only, a trainer and one trainee, or trainees only. The trainees would be required to critique the interaction, to specify the specifics of the situation to be dealt with in the interaction. Once the problem is delineated, possible behavioral solutions, or alternatives, to the interaction would be generated and discussed by the group and a "correct" answer or group of correct answers would be identified based on discussion and understanding of the effectiveness of the response for the particular situation by the trainees.

These behaviors would then be practiced in the lesson through a variety of role-play and behavioral principals, including video recording and critique of each trainee's behavior in the practice situations. To facilitate generalization of the learned behavior to the work setting, trainees would be required to practice with more than one confederate and in all instances attention will be focused on the work environment in which a trainee is placed currently. Also, at the end of the lesson each of the trainees whould be assigned "homework", a specific social skill to practice away from the lesson in the work setting with the appropriate "other" (in this case a work supervisor).

Park and Gaylord-Ross (1990) have successfully trained social behaviors in a work setting using the process model with developmentally disabled youth. One student was taught to imitate and elaborate conversations, as well as to speak clearly (not mumble). The process training successfully generalized to the workplace (restaurant setting and to people (co-workers and customers, as well as maintain at a six week follow-up. Process training thus offers much potential for SST with emotionally disturbed workers.

Larsen (1988) has developed a Social Thinking curriculum for behaviorally disordered youth. A group of students at a residential facility were taught to formulate problems, generate alternatives, select solutions, implement behaviors, and self-evaluate their performance. Larsen and Gerber (1988) reported that the youth successfully learned these cognitive-behavioral skills. Furthermore, the youth substantially reduced their frequency of problem behaviors in other parts of their lives. Although not evaluated in employment settings, problem solving programs like Larsen's hold promise for social skills training in vocational contexts.

A second subject that demands attention is relationship development. Relationship development may have some common goals with SST, but it proceeds in a different manner. Rather than focusing on a discrete behaviors, it examines the roles people play at work and tries to develop more intensive relationships. Hopefully, a certain number of acquaintanceships and friendships will develop naturally during the person's job tenure. Still, because some jobs are performed in relative isolation, or the behaviors or the stigmatizing label of an emotionally disturbed person may lead co-workers to avoid contact with him, it may be necessary to carry-out interventions which insure relationships formation.

If there is a job coach present at the work site, one of her roles may be to analyze the social network of the workplace. The job coach or counselor may then design ways to integrate the emotionally disturbed worker into this social network. For example, some co-workers may be interested in befriending and supporting the disabled worker. Such support and friendships may develop naturally. In other cases the nondisabled co-worker may need to be encouraged or prompted to form relationships. In some situations a co-worker may be formally designated as a benefactor for the disabled worker. For example, the Pathways Program for developmentally disabled workers in England (Porterfield, 1984) formally designated a co-worker to be a mentor or benefactor. The benefactor may then orient, instruct, integrate, and support the disabled worker. One tangible way to integrate the disabled worker is to analyze the social rituals at the workplace. Often a group of workers have monthly birthday parties for one of their members. It would be important that the emotionally disturbed worker participate in such birthday rituals as he becomes further integrated into workplace subgroups. A benefactor, job coach, or counselor may facilitate such social integration.

Integration into the social network at the workplace is important for a number of reasons. Becoming a productive worker usually entails working cooperatively with one's co-workers. Also, the quality of one's work experience is likely to be related to the formation of friendships at work. Finally, some research has shown social networks to offer social support which provides a buffer against stress (Cohan, & Willis, 1985). The stress-buffer notion should have important implications for emotionally disturbed workers. Competitive jobs place many pressures on employees to work rapidly, perform complex tasks, and adapt to changing tasks and demands. Such pressures may induce stress upon the emotionally disturbed work which may threaten his mental health, cause him to resign, to diminish the quality of his work experience. We are just beginning to understand the social ecology of the workplace. The development of relationship information and SST interventions should enhance the vocational potential of emotionally disturbed individuals. Furthermore, the complimentary intervention focus on the individual and the surrounding ecology is consistent with a comprehensive ecological perspective.

Gaylord-Ross, Cameto, Tappe, and Park (1990) have advanced an ecosocial perspective to explain the interplay between individual and ecological social variables. The ecosocial notion is congruent with the ecosystematic view developed by Hobbs (1982) for behaviorally disordered youth. Figure 5 presents the four levels of social reality in the ecosocial model.

PLACE FIGURE 5 HERE

For each level there are corresponding interrelationships which have been validated in past research and practice. The macro level represents large scale setting variables which may influence social integration. Vocational, an agency, region, or state might implement a systems change effort to convert from a sheltered workshops system to a community-based one. With such changes, youth in transition would have a dramatically different quality of work life between a workshop and competitive work environment. The next, relationship level of social reality articulates the different networks in a person's life. For example, an individual has two acquaintances and one friend at work. The same person may have many, few or no relations with persons in the other domains of school, residence, or community. These persons may have different types of relationships and offer varying kinds of support, e.g., instructional, emotional.

Relationship interventions in the workplace are just beginning to be explored. Park, Johnson, Tappe, Simon, Wozniak, and Gaylord-Ross (1990) have had co-worker benefactors participate in a six week relationship intervention. The co-workers generate activities which could better socially integrate the disabled employee at the workplace. The third, social interaction level of social reality is the one most frequently investigated and previously described in this chapter. The intra-individual, cognitive level of social reality focuses on social problem solving process and interventions (cf. Park & Gaylord-Ross, 1989). A comprehensive vocational-socialization program should address all levels of social reality. Fortunately, increasing number of research and demonstration efforts are documenting a wide range of efficacious ecosocial programs.

Vocational/Transition Programs

The goal of this section is to provide a broad overview of vocational training programs for SED students at two different sites: the Sprague High School Program operated by the Teaching Research Division of Western Oregon State College (TR) and the Career Ladder Program operated by San Francisco State University in the Bay area. To conclude the section, a summary of key features of the program are identified and issues relating to utilizing competitive employment sites in the transition preparation of SED youth are discussed.

The Sprague Program

For almost 10 years staff at TR have been working with SED secondary students in a high school program located at Sprague High School in Salem, Oregon (Nishioka-Evans, 1988). The students referred to this program are among the most difficult served by the Children Services Division of the state of

Oregon. All carry the SED label and most present other mild cognitive disabilities (eg., mild mental retardation). Further, the great majority of these students exhibit extreme deviant behaviors (eg., stealing, prostitution, physical aggression) that has made it impossible for them to be maintained in their homes and/or community schools, hence their referral to this site. While no experimental or quasi-experimental evaluation of the intervention has been conducted to date, long term follow-up of the 48 students who have participated in the program has been conducted. For 65% of the students, their community adjustment for one year after leaving the program has been acceptable as evidenced by successful school or work placements. This is a notable result, especially in light of the serious problems they exhibited prior to entering the program.

Between 10 to 14 male and female students are involved in the program at any one time, with the average stay being one to two years. There are two main residences for the participants, a group home and a supervised apartment living complex operated by TR, while some students live in a foster care residence or in very rare cases with their natural parents.

The school component takes the form of a resource room, with students being mainstreamed into other classes as appropriate, but the core of the school program is based on a functional curriculum (Fredericks & Nishioka-Evans, 1987; Nishioka-Evans & Fredericks, in press). This instructional model is not focused toward traditional, academic classes. Rather, it emphasizes practical learning grounded in the requirements of working and living in the community, and utilizes a task analytic, behavioral teaching approach. Broadly, instruction is provided in three major content areas: independent living, social interaction, and vocational skills. Delineation of skills taught in the three domains is provided in Figure 6 (Nishioka-Evans & Fredericks, in press). Particular attention is given in preparing students for the living and work settings they will move to upon leaving the program, and to involve all appropriate service agencies and resources in the eventual movement of the student to another setting.

PLACE FIGURE 6 HERE

What makes this program unique, and quite possibly the reasons for its effectiveness, relates to its emphasis on teaching these functional skills in the community. This means that independent living skills must be taught and learned in actual residences, that vocational skills must be practiced in community-based work settings, and that correct social behaviors for community integration must be learned and rehearsed in the work, living, and social environments in which they naturally occur. Of course, initial instruction should take place in the classroom, but to be truly effective the intervention must be grounded in the actual demands of living and working in the community.

> Certain skills can be practiced or role played in the classroom but they must eventually be generalized in the community in "real" situations. For instance, one can practice a job interview in a classroom but one must actually demonstrate those skills in a bona fide job interview. Certainly the use of the calculator can best be taught in a classroom, but the use of a calculator to figure out the costs of items in stores, totaling the balance in a checkbook, or budgeting one's money must be eventually demonstrated in the "real" world. There are no functional living skills, social skills, or vocational skills that can be learned solely in a classroom environment. Each must be practiced in the actual community or situation in which the skill is to be used (Nishioka-Evans & Fredericks, in press).

In line with this community-based instructional philosophy, a five phase system of vocational instruction is employed. Each higher phase is more demanding than the previous one, as movement through the system progresses from closely supervised training in unpaid vocational sites to unsupervised and paid work in competitive jobs in the community. These phases and their respective requirements are presented in Figure 7.

PLACE FIGURE 7 HERE

Following this approach, untrained, inexperienced students are likely to begin their vocational training at Level I. Students who demonstrate exceptional work skills and appropriate job-related behaviors may advance through the hierarchy to as high as Level V. Of course, there are fits and starts to such training, and most students do not progress cleanly and without incident through the five employment phases. In fact, failure is common as evidenced by the work histories of 15 students presented in Table 1. Clearly, a critical element of success for participants in this program, and probably for other SED students as well, rests with the persistence that must be demonstrated in continuing to place students in vocational positions.

PLACE TABLE 1 HERE

In the Fall of 1989 TR began a supported work model demonstration project, similar to the Sprague model, at the Children's Farm Home in Corvallis, Oregon (Fredericks & Bullis, 1989), a program that serves adolescents who have either been adjudicated or who are wards of the court system. Almost all these youth have an unsuccessful school history, most are labeled as SED, and many are learning disabled. This effort is funded through federal dollars earmarked for the supported work initiative. Thus, participants in the program strive to work 20 hours per week in a paid, competitive job. Accordingly, the major focus of the project is on students ready to enter Level IV or V of the employability levels; most individuals are older (16 to 18 years of age), with a degree of work experience, and with at least some of the appropriate skills necessary to work competitively. To our knowledge, this project is one of the first of its type to deal specifically with this population under the umbrella of the supported work initiative.

The Career Ladder Program

The Career Ladder Program (CLP) is a longitudinal transition program serving mildly handicapped youth in San Francisco. While the vast majority of the students in the program are learning disabled, approximately 10% of the youth are classified seriously emotionally disturbed. Also, many of the LD youth have accompanying behavioral problems. Therefore, we feel that the program components of CLP would be applicable to a SED population.

The CLP (Siegel, Greener, Prieur, & Gaylord-Ross, 1988) program ideally starts with a semester work experience during the tenth grade. Some students begin in 11th and some in twelfth grade. The 10th grader would spend three half school days at a particular work site. The CLP has identified a variety of work training sites which include: hospitals, office buildings, warehouses, restaurants, etc. The twelfth grade students spend 4 half days at the work site. It is designed so that students will rotate through different work settings through their secondary years (cf. Gaylord-Ross, Forter, Storey, Gaylord-Ross, & Jameson, 1987). This permits a formative assessment of the pupil's vocational abilities and preferences across different work ecologies.

The CLP uses a community classroom model (Gaylord-Ross, Forte, & Gaylord-Ross, 1986) to conduct work experience training. Four to six students attend a work site. One instructor (a teacher or paraprofessional) supervises the small group of students. Originally the students are taught job tasks at a single site in the business. Over the semester the students are dispersed throughout the work site. The instructor moves around the site supervising each student. The instructor also attempts to turn over supervision to real co-workers. The instruction also facilitates social interactions and friendly development between students and co-workers. Careful data is collected by the instructors, co-workers, and the students themselves on their job performance.

In addition to the community work experience, the students spend an additional half-day at a career laboratory. A 15 week career education curriculum is implemented (Siegel, Greener, Prieur, & Gaylord-Ross, 1990). The lab addresses such topics as: career opportunities, general work behaviors, social skills, job procurement, and job retention. Students also discuss their experiences at the work site. A problem solving approach (D'Zurilla, 1988) to work issues is utilized in discussing and developing strategies for work and life issues.

The CLP has a unique postsecondary program component. Students exiting from school are passed on to transition specialists in CLP. These professionals provide an array of vocational services. Their immediate charge is to place the trainee into permanent employment. A number of students obtain permanent employment at the work site they were trained at as seniors. Other exiters are placed in other jobs. The transition specialist provides ongoing follow-up to graduates with such services as: informal counseling, referral to continuing education, social skills training, on-the-job crisis intervention, family support, and referral to intensive counseling. The CLP has served up to 200 students with rather impressive outcomes. The structural and supportive nature of the program would appear to make it quite appropriate for SED youth.

Key Elements of the Programs

It seems that there are several factors common across both of the programs described above. First, both programs emphasize employment and inundate the academic setting with vocational preparation activities and opportunities. Vocational instruction is not viewed as an "add on," but as the primary focus of the programs in combination with progmatic academic instruction. Second, networking among support agencies and services is an integral part of each program and a clear transition process is articulated. Finally, both programs extensive use of actual vocational placements in competitive work settings to offer realistic training experiences and to promote the transfer of skills learned in the academic setting or another work setting to novel, realistic environments. Such an approach mandates that the community and competitive employment settings become the learning environments for these students. This emphasis, i.e., training SED students in community settings, is relatively unique in contemporary practice and is discussed from a slightly different perspective in the following section.

Business Factors and the Transition of BD Youth

Employment success has often been viewed as the primary determinant of successful transition (Will, 1984). The typical focus has been on improving educational and service programs to enhance transition. Yet, the business rather than service community may hold the real key to successful employment. After all, it is the employer who hires, retains, promotes, and fires. It may be useful then to examine some of the business variables which impact on disabled youth in transition.

A pressing business need in the country is for a qualified workforce. The productivity growth rate in the U.S. has dropped precipitously in the last two decades from 2% to .5%. This decline in many ways reflects the inefficiency of American workers. Effective vocational training and placement programs can guarantee the employer that a productive and efficient worker will be obtained. The supported employment initiative and resulting service programs have used on-the-job instructors to ensure that work tasks are successfully completed. Such quality of control of worker output is particularly appealing to employers. In fact, Halpern (1973) reported that efficacious vocational programs could successfully place disabled workers under economic circumstances of high unemployment.

Embedded within the productivity issues is the matter of "literacy in the workplace." Businesses often report that their employees are semi- or illiterate. This has led some employers to go "offshore" to have work completed overseas. More progressively, a number of employers have instituted basic academic skill training, or on off work hours, in order to upgrade the quality of their workforce. Unfortunately, Neel et al. (1988) reported that only 17% of SED youth are participating in postsecondary education. This bodes poorly for the improvement of academic and other skills. It would behoove vocational education programs at the school and postschool levels to incorporate literacy and basic math skills in their curriculum. Meers (1989) has shown how jobs will be available in high and lower technology occupations. Meers illustrated how special needs students lacking advanced technical skills may still be quite employable within high tech contexts.

Besides getting jobs, it is important that disabled youth access positions with upward mobility. In fact, we have listened to a number of mildly disabled state that they would not accept "slave" jobs which were low paying and headed nowhere. Thus, The Career Ladder Program entered training agreements with large corporations whereby a number of our graduates might assume substantive positions in those companies. Substantive positions assume the characteristics of full-time, benefits packages, and most important, upward mobility. The name career ladder entails that the trainees will enter career paths with ascending pay, status, and skill level. With this career ladder package in place, we have experienced many inner city, special needs youth opt for and complete our training regime.

The CLP has shown how effective transition agreements may ensure between education and business. In this case we, the educational system, approached business and draw the working agreement. A new development in the field may reverse this arrangement. Corporate initiative programs have a company start and promote the training of persons with special needs. Thus, the business approaches an educational agency and explains the program for job and training opportunities. With jobs promised, it is likely that the service program will respond. In a best case scenario the company will also take the lead in on-the-job training and the funding thereof. Thus, corporate initiatives hold a promise for aggressive, effective, and cost beneficial employment programs for disabled youth.

Summary and Closing Comments

In many respects SED adolescents in transition represent the "last frontier" for demonstrating program efficacy. Substantive advances have been made in vocational services for youth with severe disabilities (Rusch, 1987; Wehman, 1981) and effective secondary and postsecondary programs are also in evidence for youth with learning disabilities and special needs (Brown, 1987;

Neubert, & Iannacome, 1989; Siegel et al., 1989). However, because the workplace is relatively intolerant of behavioral disturbances, few effective in situ demonstrations with SED youth have been implemented.

This monograph highlighted important activities and program components that should be in effective services for the SED population. A comprehensive vocational assessment should identify pupil preferences, abilities, motivational characteristics, and instructional designs. A longitudinal vocational program should be designed which includes a postschool, vocational safety net of services. The vocational education should include a series of community-based work experiences where general work skills are mastered. It should also mainstream the disabled student into appropriate occupational training courses. Furthermore, academic skills aught to be infused into vocational activities. A career education curriculum should focus on job search and job keeping skills. Particular attention should be given to social skills relevant to the workplace. Of great import, the vocational programs must be coordinated with, if not initiated, by the business community. Such protracted business-education relationships tend to engender substantive jobs for career ladders. The business takes ownership over the vocational enterprise and is likely to make the accommodations necessary to employ behaviorally disordered youth in transition.

The seriously emotionally disturbed individual presents a great challenge to vocational education and transition programming. It is one thing to teach a few job tasks in an isolated setting; it is quite another to have the person display a myriad of critical behaviors in a real work setting in order to hold a job. Vocational education for persons with emotional disturbances is a relatively new, yet growing field, and an instructional technology is emerging to fulfill the goals of the employment and transition initiative. We have suggested an ecological and curricular approach to vocational assessment and training. Here, the individual is portrayed within a political and educational context. Vocational education cannot only rely on educators, it must also get substantive support from the business world in hiring and funding programs for disabled persons. These programs must rely on the highest level of behavioral technology to manage and suppress disruptive behaviors in the workplace. As has been pointed out, the presence of antisocial behaviors and the absence of positive social skills makes the typical emotionally disturbed person a poor candidate for job placement and retention. Yet, social competence at work can be engendered through the new interventions which foster social skills and develop supportive social relationships. The analysis of social support networks, and particularly benefactor roles in the workplace, hold great promise for enhancing the employability and communiyt integration of persons with serious emotional disturbances.

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	Screening	Knowledge	Analogue	Competitive
Individual Interests and Demands				
Work Performance				
Work Adjustment				
Social/Interpersonal Behavior				

Figure 1. Vocational Content Domains and Assessment Phases

1. Accepting criticism or correction from a work supervisor
2. Requesting help from a work supervisor
3. Following instructions from a work supervisor
4. Quitting a job
5. Taking time off
6. Working as fast as co-worker
7. Talking to a work supervisor about a problem
8. Working with a co-worker to complete a job
9. Dealing with teasing or provoking from co-workers
10. Personal concerns
11. Making friends with co-workers
12. Talking with a co-worker about their behavior
13. Being talked to by a co-worker about a problem
14. Fighting
15. Stealing and lying
16. Dating

Figure 2. Content of Interview Questions

- Grant was hired to be a mechanic in an automobile repair shop, but all he was allowed to do was clean-up. He went in to work on his birthday hoping that on that day he would be allowed to do mechanical work. He was very disappointed when he realized he was to do clean-up again.
- Tina worked with a co-worker who continually made fun of her and called her names. Tina tried to ignore the girl, but finally had enough and asked her to please stop. The co-worker laughed and said "I won't stop, you're too much fun to give s_ _ _ to."
- John worked on an assembly line with his boss. The boss was unable to finish a task so John leaned over and did it for him saying "A f_ _ _ _ _ _ idiot could do that right."

Figure 3. Examples of Specific Social Problems

ASSOCIATED WORK SKILLS CHECKLIST

Student: ______________________________

Date: ______________________________

	Has Skill	Needs Training	Comments
WORK RELATED BEHAVIOR			
1. Checks own work			
2. Corrects mistakes			
3. Works alone without disruptions for specified periods with no contact from supervisor/ teacher			
4. Works continuously at a job station for specified amount of time			
5. Safety:			
a. uses appropriate safety gear			
b. responds appropriately during fire drill			
c. follows safety procedures specific to classroom/ shop			
d. wears safe work clothing			
e. cleans work area			
f. identifies and avoids dangerous areas			
g. responds appropriately to emergency situation (sick ness, injury, etc.)			
6. Participates in work environment for specified periods of time			
7. Works in group situation without being distracted			
8. Works faster when asked to do so			
9. Completes work by specified time when told to do so			
10. Time Management:			
a. comes to class/work for designated number of times per week			
b. arrives at class/work on time			
c. recognizes appropriate time to take break or lunch			
d. recognizes appropriate time to change task			
e. returns promptly from:			

Figure 4

The Ecosocial System

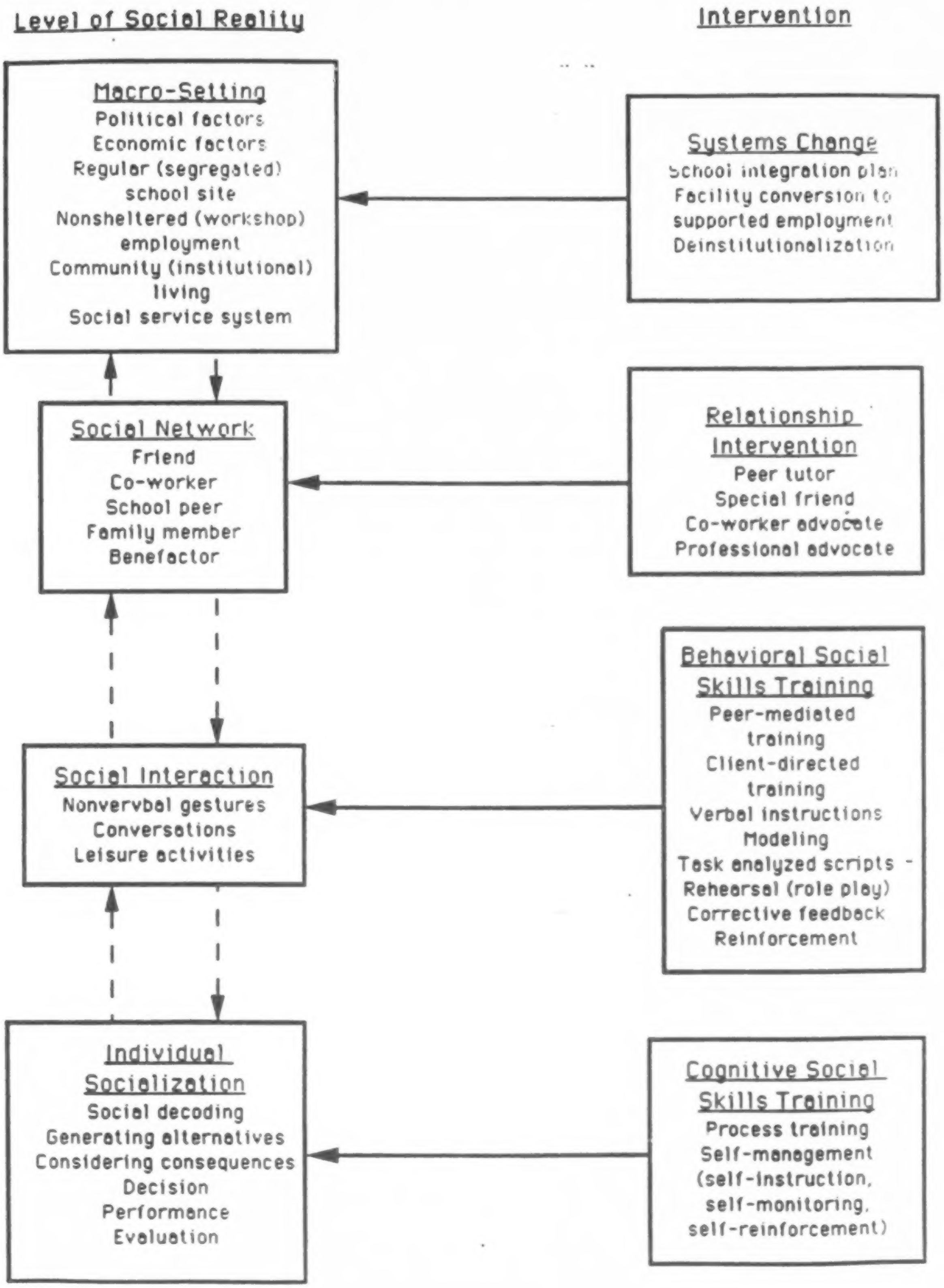
Level of Social Reality
Intervention
Macro-Setting
Political factors
Economic factors
Regular (segregated) school site
Nonsheltered (workshop) employment
Community (institutional) living
Social service system
Systems Change
School integration plan
Facility conversion to supported employment
Deinstitutionalization
Social Network
Friend
Co-worker
School peer
Family member
Benefactor
Relationship Intervention
Peer tutor
Special friend
Co-worker advocate
Professional advocate
Social Interaction
Nonvervbal gestures
Conversations
Leisure activities
Behavioral Social Skills Training
Peer-mediated training
Client-directed training
Verbal instructions
Modeling
Task analyzed scripts
Rehearsal (role play)
Corrective feedback
Reinforcement
Individual Socialization
Social decoding
Generating alternatives
Considering consequences
Decision
Performance
Evaluation
Cognitive Social Skills Training
Process training
Self-management
(self-instruction,
self-monitoring,
self-reinforcement)

Figure 5

The scope of independent living skills incudes the following:

- Telephone Skills
- Newspaper Skills
- Transportation Skills
  - Public Transportation Utilization
  - Car Ownership and Management
- Money Skills
  - Budgeting
  - Bill Paying
  - Banking
  - Shopping Skills
  - Food
  - Clothes
  - Other
  - Menu Planning
  - Cooking Skills
  - Home and Yard Maintenance
  - Survival Reading (Being able to read signs in supermarkets, newspapers, clothes labels and size, job applications, recipes, schedules, etc.)
  - Use of the Calculator
  - Measurement Skills
  - Leisure Time Skills

The social skills domain includes:

- Human Awareness:

  - Self-esteem
  - Personal rights
  - Relationships
  - Feelings
  - Solving problems
  - Sexual knowledge

- Communication

  - Compliments
  - Conversation
  - Assertiveness
  - Listening skills
  - Speaking skills

The vocational domain of the functional curriculum includes:

- Applying for a job
- Learning how to interview for a job
- Performance on the job
- Using correct social skills on the job

Figure 6. Structure of the Functional Curricula

PHASE I 'The Learning Phase'

1 - Is supervised and trained on all tasks and duties by vocational trainer.
2 - Learns various job duties required by job site.
3 - Learns and follows all rules and regulations as posted by vocational site.
4 - Begins to identify and work on skills and behaviors exhibited at work site.
5 - All data from skill and behavior program to be collected and recorded by trainer.
6 - Begins to explore transportation options such as city busses, bicycling, walking.
7 - May begin bus training if appropriate and available.
8 - Maintains a minimum of three working hours per week.
9 - All consequences and contacts to be handled by trainer.

PHASE II 'The Responsibility Phase'

1 - Trainer to make intermittent quality checks while remaining on job site.
2 - Begins to maintain various job duties independently.
3 - Begins to follow all rules and regulations of job site independently.
4 - Begins to set own goals with trainer and watches own behaviors.
5 - All data from skill and behavior programs to be collected and recorded by trainer.
6 - Begins transporting self using public if available with trainer guidance and supervision.
7 - Uses vocational time wisely, maintains satisfactory work rate and quality.
8 - Will maintain at least 5 working hours per week.
9 - Begins to receive and respond to occasional feedback from employer.
10 - All consequences and majority of contact to be handled by trainer.

PHASE III 'The Transition Phase'

1 - Trainer not at job site, makes intermittent quality checks.
2 - Independent in all job duties and tasks.
3 - Follows all rules and regulations of job site independently.
4 - Works toward vocational goals and maintains own behaviors.
5 - Skill and behavior data monitored with travel card.
6 - Independent transportation to and from work.
7 - Maintains work quality equal to that of regular employee.
8 - Will maintain at least 10 working hours per week.
9 - Responds to employer in all job related matters.
10 - Consequences given by either trainer or employer, with the emphasis on employer.
11 - May be hired.

PHASE IV 'The Independent Phase'

1 - Trainer to make intermittent quality checks by phone.
2 - Independent in all job duties and tasks.
3 - Independently follows all rules and regulations of job site.
4 - Continues to work towards vocational goals and monitors own behaviors.
5 - No formal behavior programs.
6 - Independent to and from work site.
7 - Maintains work quality equal to that of regular employee.
8 - Will maintain 10-15 working hours per week.
9 - Responds to employer in all job related matters.
10 - Consequences given by employer.

PHASE V 'The Employability Phase'

1 - Trainer assists with administrative issues.
2 - Employer trains and manages.
3 - Reaches vocational goals.
4 - Independent to and from work.
5 - Maintains 20 working hours per week for 1 year.
6 - Is hired by employer.

Figure 7. Phase System of Job Placement

APPENDIX A

JOB-RELATED SOCIAL SKILL TAXONOMY

JOB-RELATED SOCIAL PROBLEM TAXONOMY

1. **Social Problems when the Trainee has Difficulty Accepting Criticism or Correction from a Work Supervisor.**

    A. The trainee worked in a lazy and casual manner. The work supervisor criticized the trainee for working poorly.

    B. The trainee was trying very hard to complete a job, but was having difficulty. The work supervisor criticized the trainee for the work problems.

    C. The trainee was working hard and doing the assigned job very well. The supervisor was in a bad mood and criticized the worker unnecessarily and in an abusive fashion.

2. **Social Problems when the Trainee has Difficulty Requesting Help from a Work Supervisor.**

    A. The trainee was very busy on an assigned job but wasn't sure how to proceed with the work. The trainee didn't' want to take the time to ask the work supervisor for help because s/he wanted stay busy.

    B. The trainee was unsure how to do an assigned job and could go no farther with it, until more information was given by the work supervisor. However, the trainee was afraid of the supervisor and fearful to ask for help.

    C. The trainee was doing a job and needed help to finish it correctly. The trainee did not want to ask the work supervisor for help because s/he wanted to do the job by themself and well.

    D. The trainee was doing an assigned job poorly, and in a lazy and casual manner. The trainee needed help from the work supervisor to complete the job properly.

    E. The trainee needed help from the work supervisor to finish a job. The trainee asked the supervisor for help in a demanding and discourteous manner, which made the supervisor angry.

3. **Social Problems When the Trainee has Difficulty Following Instructions from a Work Supervisor.**

    A. The work supervisor was in a hurry and only partially explained how to do a job. The trainee was unsure what to do, but the supervisor was very busy elsewhere.

    B. The trainee was told by the work supervisor to move from a job s/he enjoyed and had done for some time, to a less desireable task. The trainee did not want to move.

C. After coming to work the trainee was told that s/he would have to work overtime. The trainee didn't want to work the extra hours because a social engagement had been made for that time.

D. The work supervisor gave the trainee several directions quickly. The trainee couldn't remember all of the instructions but didn't want to ask the supervisor for help because the supervisor might think that s/he was dumb.

E. The trainee asked the work supervisor for help on how to finish a job. The supervisor gave an abrupt, angry, and inappropriate response to the request.

F. The trainee was given a job to do, but didn't want to do it and responded negatively to the supervisor. The supervisor became angry at the trainee.

4. Social Problems Created Over Quitting a Job

A. The trainee hated their current job, thinking it both boring and beneath him/her, and wanted to quit.

B. The trainee was very angry at their work supervisor and wanted to quit their job to get away from the supervisor.

C. The trainee got a new job at better pay and needed to quit his/her present position.

D. The trainee liked his/her work supervisor, but had to quit the job. The trainee was reluctant to tell the supervisor directly that s/he would be quitting.

E. The trainee felt that s/he was being treated unfairly at work and wanted to quit the job.

F. The trainee was teased constantly by co-workers, and dreaded coming to work. To avoid the abuse s/he wanted to quit the job.

5. Social Problems Resulting From Taking Time Off From Work.

A. The trainee asked the work supervisor for time off to go to a medical appointment and was given permission. However, when it was time to leave, the supervisor did not want to let the trainee go to the appointment.

B. The trainee asked the supervisor for permission to go to an appointment for a personal reason (eg., haircut). The supervisor didn't think the request was important and told the trainee s/he couldn't go.

C. The trainee had a history of being late to work. The trainee was late again and the work supervisor got angry, threatening to fire the trainee.

D. The trainee was tired of working and wanted time off. Some friends asked the trainee to go to a party and skip work.

E. The trainee skipped work. While s/he goofing off, the work supervisor saw him/her.

F. The trainee wanted time off from work. The trainee asked the supervisor for time off in a demanding and discourteous manner, which made the supervisor mad.

6. **Social Problems Created by Not Working as Fast as a Co-worker(s).**

A. The trainee was having trouble with her/his machine and couldn't work as quickly as other coworkers. The trainee couldn't get the machine to work properly and wanted to do well.

B. The trainee was very busy, but didn't seem to be able to work as quickly as other coworkers. Even though the trainee tried hard, s/he couldn't work faster.

C. The trainee was new at the job and had difficulty doing the tasks. S/he wanted to do well, but couldn't keep up with or work as quickly as other coworkers.

D. The trainee was working slowly and carefully to do a good job, but as a result couldn't work as fast as other co-workers.

E. The trainee was not working hard and acted very unconcerned about the slow pace of his/her work.

7. **Social Problems Created by Talking to the Supervisor About a Personal Problem.**

A. The trainee had a problem at school with a class and considered talking about it with the work supervisor.

B. The trainee had a problem doing his/her job and considered talking about it with the work supervisor.

C. The trainee was having a problem getting along with a family member and considered talking about it with the work supervisor.

D. The trainee was having a problem getting along with a coworker and considered talking about it with the work supervisor.

E. The trainee was mad at the work supervisor and thought about confronting the supervisor directly.

F. The trainee was having a problem getting along with a friend from school and considered talking about it with the work supervisor.

G. The trainee was having difficulty resisting using drugs and considered talking about the problem with the work supervisor.

8. Social Problems Created when Working Together With a Co-worker.

   A. The trainee worked together with a coworker on a job. The coworker was lazy and didn't work hard, leaving the trainee to do most of the work. The trainee thought this was wrong and grew angry.

   B. The trainee worked together with a coworker on a job. The trainee was lazy and didn't work hard, leaving the trainee to do most of the work. The coworker became angry and confronted the trainee.

   C. The trainee worked with a coworker who made constant comments of a sexual and personal nature to the trainee. The comments made the trainee uncomfortable and s/he wanted the coworker to stop.

   D. The trainee made constant comments of a sexual and personal nature to a coworker. The comments made the coworker uncomfortable and s/he asked the trainee to stop.

9. Social Problems Created by Sexual or Personal Provocation

   A. The trainee worked with a coworker who made constant comments of a sexual and personal nature to the trainee. The comments made the trainee uncomfortable and s/he wanted the coworker to stop.

   B. The trainee made constant comments of a sexual and personal nature to a coworker. The comments made the coworker uncomfortable and s/he asked the trainee to stop.

   C. The trainee was very upset because s/he thought that the other coworkers were talking about and making fun of her/him.

   D. The trainee was teasing the work supervisor and coworkers at break, but wouldn't stop when work resumed.

10. Social Problems Created by the Trainee's Personal Concerns

   A. The trainee was having problems getting along with a family member and was upset upon coming to work.

   B. The trainee was having problems getting along with a girl/boy friend and was upset upon coming to work.

   C. The trainee was having problems getting along with her/his roommate and was upset upon coming to work.

   D. The trainee was having problems with school work and was upset upon coming to work.

11. Social Problems Created by the Trainee Trying to Make Friends at Work

   A. The trainee tried to make friends with coworkers in a sincere and appropriate manner, but they rebuffed the trainee because s/he was in the special work program.

B. The trainee tried to be friends with several coworkers who took advantage of the friendship by making the trainee the butt of jokes.

C. The trainee wanted to make friends with coworkers, but acted in bizarre ways to gain attention. The coworkers told the trainee that he was strange.

D. The trainee wanted to make friends with coworkers on the job, but wasn't sure how to approach them..

12. **Talking to a Co-worker About Their Behavior.**

A. Talking with co-worker(s) about their poor or ineffective work.

B. Talking with co-worker(s) about their inappropriate social behavior on the job.

C. Talking with co-worker(s) about teasing.

D. The worker confronted a co-worker inappropriately.

13. **Problems When a Co-worker Talks to the Worker About Their Behavior.**

A. Talking with the worker when she or he was working in a poor or ineffective manner.

B. Talking with the worker when she or he was behaving in an inappropriate manner.

C. Talking with the worker when she or he was teasing others.

14. **Fighting**

A. Co-worker confronted the worker over a work task in an aggressive fashion.

B. Supervisor confronted the worker in an aggressive fashion.

C. The trainee came to work wearing very fashionable clothes and had gotten a new, stylish haircut. The coworkers saw the new clothes and the haircut and began to tease the trainee unmercifully about his/her appearance.

D. The trainee was having fun with a coworker, by pushing and bumping each other. The trainee hit the coworker hard and the coworker became angry and came at the trainee.

E. The trainee was in a bad mood and looking for a fight. A coworker came by, so the trainee hit the coworker. Several others tried to get the trainee to stop.

15. Social Problems Related to Stealing and Lying on the Job

    A. The trainee didn't want to do a job so s/he told the work supervisor a lie to get out of the job. Later that day, the supervisor found out the trainee lied and confronted her/him.

    B. The trainee made a mistake on the job and ruined some materials. The supervisor asked about the problem and the trainee lied to stay out of trouble, but the supervisor didn't believe the story.

    C. The trainee wanted to impress her/his coworkers, so s/he lied to about some experiences and belongings, but the coworkers didn't believe the stories.

    D. The trainee wanted extra money and saw some materials that s/he could sell outside of work.

    E. The trainee stole some materials from work, and was accused by the work supervisor about being the thief.

16. Social Problems Resulting from Dating on the Job

    A. The trainee wanted to ask a coworker out on a date, but wasn't sure how to approach the other person.

    B. The trainee wanted to date a coworker, so to suggest interest s/he talked about sex. The talk made the coworker uncomfortable and want to stay away from the trainee.

    C. The trainee wanted to date another coworker's girl/boy friend, but if that happened the coworker promised to get very angry.

    D. A coworker wanted to date the trainee and was very aggressive in trying to get the trainee to go out. The trainee didn't want to have anything to do with the coworker.

    E. The trainee dated a coworker for sometime, but other workers gave the them a hard time because the trainee was from the special work program.

Program-Centered Variables

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Community-Referenced Instruction in Technological Work Settings

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ABSTRACT: Two studies investigated the extent to which students with serious vocational handicaps could learn work behaviors in technological settings. In Study 1, 12 students learned a number of chemical laboratory tasks. The median amount of training time per task was 2 hours and 37 minutes. In Study 2, pre- and posttraining videotape vignettes of 6 students performing a technical task were presented to a group of 27 respondents. On a social validity questionnaire, they judged the students to be significantly ($p < .001$) *more vocationally competent after training. The characteristics of an effective secondary vocational training program are discussed.*

■ Community-referenced instruction has become a popular approach for educating students with severe handicaps. One reason for this is that a consensus has developed among professionals in support of the "functional skills" approach, along with a rejection of the developmental approach in which handicapped students are taught those behaviors that are shown by maturational-level nonhandicapped peers. In the functional skills model, the skills needed for competence in subsequent and adult environments are identified for instruction. The basic assumption is that the student will be better prepared for adult life by acquiring the skills needed in adult community environments.

A second reason for the popularity of community-referenced instruction derives from research findings that show that persons with severe handicaps do not generalize well across persons, settings, materials, or language cues (Horner, McDonnell, & Bellamy, 1985). If our goal is to teach functional skills that will be used in community environments, then the instructional strategy must ensure that the student will perform adequately in those community settings. Because of the poor generalization skills of severely handicapped learners, it is unlikely that they will transfer learning from a classroom setting to nonschool, community environments. Thus, it is believed that preparation for community living can best be accomplished by having training exercises in actual community settings.

One domain of community training is the work situation. Early efforts in the vocational training of severely handicapped students focused on task acquisition (Bellamy, Horner, & Inman, 1979; Gold, 1973). Gold demonstrated that students with moderate and severe mental

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retardation could learn rather complex assembly tasks. Bellamy et al. further refined the process of task analysis and systematic instruction by showing how work tasks may be acquired and generalized. The primary focus of vocational training soon shifted from the task to the setting. Brown, Shiraga, Ford, VanDeventer, Nisbet, Loomis, and Sweet (1986) and Wehman (1981) demonstrated that persons with severe handicaps could work alongside nonhandicapped employees in competitive employment settings. This work mode supersedes the more traditional, "sheltered" programs where groups of handicapped person worked in segregated sites.

This article describes a vocational training program that taught students specific job tasks (i.e., chemical lab tests) that would increase their ability to learn new job tasks in the future. The training also incorporated generic work skills, such as grooming and breaktime behavior, that would carry over to future work environments. The program expanded the training settings from those that have been traditional (e.g., assembly lines, janitorial, landscaping) to technologically oriented businesses (e.g., operating computer-driven machines such as telephone operator consoles and manipulating complex laboratory equipment containing digital meters).

The program also advanced a heterogeneous model of grouping students at a work site (Gaylord-Ross, Forte, & Gaylord-Ross, 1986; Pumpian, Shepherd, & West, in press). A group of two to four students attended a work site with a teacher for approximately half of their school day. Most students were moderately mentally retarded, but groups also included students with severe mental retardation, mild mental retardation, hearing impairments, behavior disorders, and learning handicaps. These mixed groupings permitted the teacher flexibility in designing creative educational programs, for example, supervision style, peer tutoring, and social interaction with coworkers. All of the students were considered "seriously vocationally handicapped" because of their need for constant and intense supervision in the workplace (Gaylord-Ross et al., 1986). A goal for the program was to gradually fade out the degree of supervision by special education personnel, so that the student could eventually perform independently at the workplace and be employable. Thus, the program was not a placement program and there was no intent to place the students in the job settings where they received training.

Two kinds of program findings are reported: (a) task acquisition data for 12 students across a variety of work tasks (Study 1), and (b) social validity data on the perceived changes in pupil behavior as a function of participating in the vocational training program (Study 2). Social validity data complement task acquisition data by providing information not only on changes in trained behaviors, but also on general changes in a student's perceived vocational competence.

STUDY 1

Method

Students. Over a three-semester (1½-year) period, 12 students participated in a community-referenced vocational training program. The students (7 male, 5 female) ranged in age from 15 to 20 years. The students were selected from six high schools in a large urban school district on the basis of teacher recommendations, review of records, and pupil observations.

Table 1 is a summary of the students' ages, primary disabilities, and adaptive behavior scores from the AAMD Adaptive Behavior Scale (Lambert, 1981). All students were ambulatory and could follow simple directions; all but Malcolm were capable of simple conversations. None of the students had previously participated in a community vocational training program.

Setting. The training site was the Chevron Research Company, a complex of laboratory and office buildings on 40 acres. Vocational training took place in four different chemical laboratories that contained a variety of chemical apparatus, aisles of counterspace, desk work areas, and storage space for test tubes, beakers, chemicals, and petroleum samples to be analyzed or processed. Although 5 to 10 technicians were employed in each of the labs, there was much movement of Chevron employees throughout the laboratories. Many industrial noises and odors were present in the training setting.

Materials and Tasks. Typically, a student learned to do three chemical tasks during a training phase. The tasks were performed by Chevron lab technicians on an ongoing basis. In all, there were 11 possible tasks (aeration, foam, centrifuge, viscosity, flashpoint, pH, aniline point,

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1-point calibration, saturated solution, pretreater/assembly, and pretreater/attachment). The tasks were selected by the special education teacher and the Chevron staff with consideration given to safety, difficulty (moderate), duration (short), and accessibility of the tasks. Prior to the onset

TABLE 1
Student Characteristics and Performance on Chemical Tasks

Student	*Age*	*Primary Disability*	*Adaptive Behaviors Score*[a]	*Tasks*[b]	*Number Trials toward Criterion*[c]	*Hrs /Min Training Time*
Jim	19	Deafness	95	I. Centrifuge Test	15	5:00
				I. Flashpoint Test	13	3:25
				I. Viscosity Test	14	1:17
Kim	19	Moderate mental retardation	62	I. Aeration Test	44	11:00
				I. Foam Test	14 (12/18)	3:67
Alexa	18	Moderate mental Retardation	62	I. Aeration Test	51	12:45
				I. Foam Test	13 (14/18)	3:67
Robert	20	Learning handicapped	85	I. Aeration Test	32	8:00
				I. Foam Test	15 (18/18)	4:00
Malcolm	20	Severe mental retardation	13	I. Flashpoint Test	97 (15/16)	23:25
				II. pH Test	29	6:47
				II. Making a Saturated Solution	85 (10/12)	7:06
Larry	15	Learning handicapped	76	II. pH Test	29	2:41
				II. Making a Saturated Solution	24	2:00
				II. 1-Pt. Calibration	18	1:50
Candice	16	Moderate mental retardation	59	II. Making a Saturated Solution	85	7:06
				II. 1-Pt. Calibration	65 (11/11)	5:40
Paul	16	Moderate mental retardation	62	II. pH Test	33	2:70
				II. Making a Saturated Solution	26	2:20
				II. 1-Pt. Calibration	9	:45
Jack	16	Communication handicapped	94	III. Pretreater/Attachment	19	1:41
				III. Pretreater/Assembly	12	:45
				III. Aniline Point Test	14	2:32
Carla	17	Moderate mental retardation	67	III. Pretreater/Attachment	55	4:46
				III. Pretreater/Assembly	31	1:05
				III. Aniline Point Test	29 (12/12)	5:10
Mitch	16	Learning handicapped	97	III. Pretreater/Attachment	55	4:46
				III. Pretreater/Assembly	26	1:22
				III. Aniline Point Test	25 (10/12)	5:11
Roxanne	17	Moderate mental retardation	51	III. Pretreater/Attachment	32	2:54
				III. Pretreater/Assembly	59	2:28
				III. Aniline Point Test	20 (9/12)	4:46

[a] Percentage score on AAMD Adaptive Behavior Scale, TMR norms. [b] Roman numerals before tasks refer to training phase. [c] Fraction indicates highest performance on a task not attaining learning criterion, e.g., 7/12 = 7 correct behavioral steps on a trial with a 12-step task.

of a training phase, the special education teacher was trained by Chevron staff in how to complete each of the tests. Then, the teacher further task analyzed the tasks and made instructional adaptations to meet the needs of each of the handicapped students.

Procedures. Each student participated in a 4 1/2-month training phase during the fall or spring semester. Community vocational training was provided for half of the school day (about 4 hours) in the morning or afternoon, 5 days per week. A group of two to four students was supervised by a community classroom teacher (author JF), who provided instruction on laboratory tasks, chemical tests, travel skills, generic work skills, and social interaction behaviors. Students spent the remainder of each day in the high school special education program.

Before instruction began, at least two baseline (pretest) probes were given on a lab task. The teacher stood next to the student in front of the laboratory equipment and gave the verbal cue "I want you to do the _____ test." The student was given at least 30 seconds to make appropriate responses (which were unlikely). No assistance was given. The number of correct responses on the steps in the task analysis was recorded.

When instruction began, the student practiced one to five trials of a task per day. Each lab task took 10 to 40 minutes to complete. The teacher presented cues and reinforcers in a manner consistent with the systematic instruction procedures described by Bellamy et al. (1979). Each training trial began with the teacher saying "Do the _____ test." The student was expected to do the steps in the test in a forward, concurrent manner (Gaylord-Ross & Holvoet, 1985).

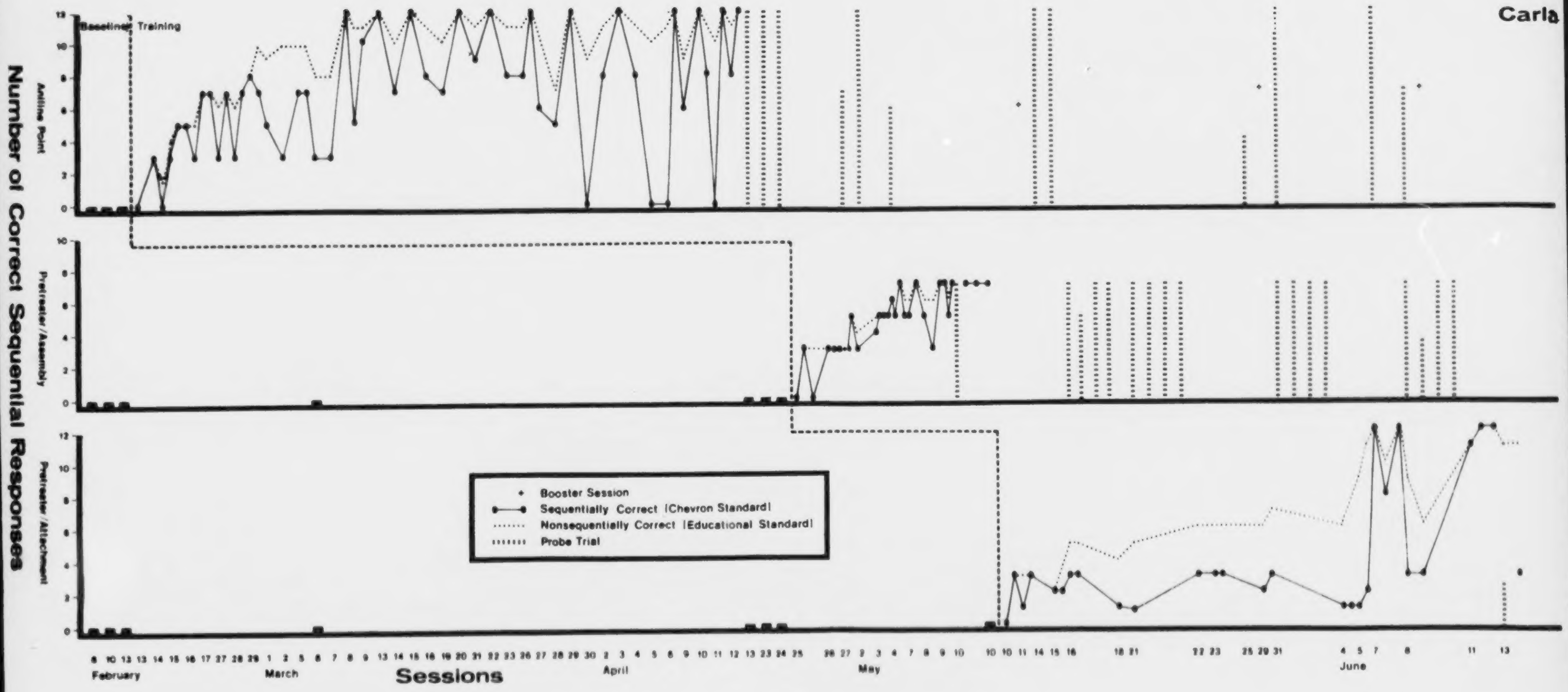
Instruction was presented in three phases that differed in the instructional procedures used. The Phase I instruction included a series of cueing procedures to prompt task acquisition. A modeling procedure was first. The teacher demonstrated a behavioral step and then told the student to perform the behavior. For example, the teacher would turn on a lab machine switch with the student watching. Then she would verbally cue the student, "Now you do it. Turn on the line switch." The student was allowed to perform the response. Next, the teacher modeled and verbally cued the next behavioral step of the task, proceeding through all steps in this forward, concurrent manner. When the student evidenced substantial progress with the modeling procedure, a verbal (only) cueing procedure was used. The student went through each of the steps in the chain, preceded by a verbal cue from the teacher (e.g., "pour the oil"). The last procedure (no cues) occurred when the student demonstrated progress in task performance with verbal cues only. This was an independent procedure whereby no cues were provided prior to each step. A correction procedure was used when the student made an error. The student repeated the incorrect step, with the teacher providing the least obtrusive prompt (verbal, gestural, manual guidance, or modeling).

In Phases II and III a forward, serial chaining procedure was used (Gaylord-Ross & Holvoet, 1985). No antecedent modeling or verbal cues were presented for each step. The student was brought to criterion on each step in a cumulative fashion. Corrective feedback was given for error responses. A serial chain differs from a concurrent chain in that one new behavior is taught at a time. For example, Behavior A is first learned to criterion. Then Behavior B is introduced so that the chain A-B must be performed. When A-B is learned to criterion, the student then practices A-B-C to criterion. In contrast, in a concurrent chain the student begins from the start by practicing Behaviors A-B-C.

An isolated task, massed trial approach (Bellamy et al., 1979) was used when a student was having difficulty on a particular behavioral step. Through repeated trials (5-10) of the behavior the student practiced the difficult step in succession, not in conjunction with the rest of the behavioral chain. For instance, a difficult step such as an oil-pouring response could be practiced five times at the end of an instructional session.

Recording. A task analysis data sheet was used to monitor the student's progress over time. For Phase I training, the teacher marked correct responses (+) and incorrect responses (-) on the recording sheet, for each step of the task analysis. At the end of the trial, the number of correct responses was tallied. For Phases II and III (verbal and no cue phases), the teacher tabulated both the overall and the sequential number of correct steps. Thus, if a student performed Step 1 incorrectly but went on to complete the remaining 11 steps correctly, the

FIGURE 1
Successive Learning of Three Chemical Tasks by Carla



scores were 0/12 (sequential) and 11/12 (overall). In a work context the quality of the final outcome is based on the accuracy of the preceding responses. Thus, if a person errs on the first step, the remaining steps will of necessity be wrong. Hence, the industrial standard for the trial is 0/12 while the educational performance is 11/12, since the student correctly demonstrated 11 out of 12 responses. In our scoring, if a student performed the first 5 steps correctly, but missed Step 6, the overall, educational score would be 11/12 and the sequential, industrial score would be 5/12.

Reliability. Periodically during baseline, training, and maintenance sessions, another person would observe and record a student's performance on a separate data sheet in the same manner as the teacher. Interobserver agreement was calculated using agreement of the two recorders on each step in a trial.

During 10 Phase I reliability checks, agreement ranged from 90% to 100%, with a mean of 98%. Reliability checks were more frequent during Phases II (81 checks) and III (91 checks). Phase II reliability ranged from 67% to 100%, with a mean of 99% (on two occasions, agreement on two of three possible steps produced a 67% agreement coefficient). Phase III reliability ranged from 83% to 100%, with a mean of 97%.

Learning criterion. The learning criterion was jointly defined as correct, independent performance on all steps of the task analysis for three consecutive training trials and 100% accuracy on a maintenance probe trial. In addition to the teacher monitoring a student's task acquisition, a Chevron lab supervisor or technician checked the student to determine whether performance was consistent with industrial standards. When the student reached these learning criteria, a new task was introduced.

Maintenance. A maintenance probe (noninstructional trial) was given approximately once a week after learning criterion was reached. In Phase III, students whose maintenance performance fell below 80% accuracy received a "booster trial," an instructional trial complete with reinforcement and correction procedures. After a booster trial, a maintenance trial was given on the next training day to assess the effectiveness of the booster trial. If the student demonstrated at least 80% accuracy on the task, a maintenance probe was given a week later. If performance was lower than 80%, another "booster trial" and probe was given immediately.

Training time. For Phase I and II training groups, the training time to reach learning criterion was defined as the average estimated number of minutes of direct instructional time per training trial for each task. The time varied according to the task and excluded waiting time (e.g., when a test was running its course and required no response from the student or the teacher). During Phase III, actual 1:1 (teacher:student) instructional time was tabulated by the teacher with a stopwatch. It was measured from the time of the teacher's initial verbal cue to the end of the instructional session. The daily training time for each student was recorded and tabulated until learning criterion was reached.

Results

Pupil progress data are included in Table 1. The results for each student are expressed in terms of the number of tasks learned, the number of trials to criterion, and the number of hours of training time. Four students reached acquisition on three laboratory tasks. Three students learned two tasks. Three students learned one task and one student attained partial acquisition on three tasks. Almost all of the students made substantial progress on the tasks on which they had not yet reached criterion. The median number of trials to criterion for learned tasks was 27. The median number of hours of training time for learned tasks was 2 hours and 37 minutes.

Figure 1 is a graph of the performance of a representative student. Carla attained learning criterion on two tasks, pretreater/attachment (which took 4 hours and 46 minutes) and pretreater/assembly (1 hour and 5 minutes). She almost reached criterion on the aniline point test. Carla showed good maintenance on pretreater/assembly. Although her pretreater/attachment performance dropped below 80% on maintenance probes, on two occasions a single booster session elevated performance to 100% on the subsequent probe. The discrepancy between sequential and nonsequential performance is illustrated in Figure 1. Carla, like other students in the program, learned to complete many behavioral steps out of sequence before mastering the proper sequential order.

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In addition to learning specific laboratory tasks, students learned several generic vocational skills, such as independent travel to the work site, grooming, functional money and math skills, prosocial interactions with coworkers, functional reading of signs at the workplace, and leisure breaktime behaviors. For example, Larry and Paul learned to take public transportation to school after bus training to Chevron. Malcolm, who was nonverbal, learned to sign "toilet" to the teacher or lab supervisor prior to going to the restroom. Roxanne recognized 3 out of 18 signs (e.g. fire exit, caution) at the beginning of her training phase. By the end of the phase she recognized and could respond to all 18. Carla learned seven coin combinations in order to make vending machine purchases. She also acquired the skill of using a pocket calculator. Larry learned to purchase his own lunch in the Chevron cafeteria. A self-monitoring technique for grooming on a daily basis was accomplished with a pictorial checklist (see Sowers, Rusch, Connis & Cummings, 1980). Appropriate greeting, conversational, and other prosocial behaviors were taught with role modeling (cf. Gaylord-Ross, Haring, Breen, & Pitts-Conway, 1984) and behavioral contract procedures.

STUDY 2

Study 1 demonstrated that students with serious vocational handicaps can learn a variety of technological tasks in actual work settings. Still, it could be questioned whether these students were perceived to be competent when performing the vocational tasks. The issue of social validity (Kazdin, 1977; Kazdin & Matson, 1981) has become important in the behavior analytic field because it is possible to find significant changes in particular behaviors even when there has been no substantive change in the individual's life. For example, a person's aggressive acts might be reduced from 10 to 3 per day, but the individual might still be considered seriously behavior disordered. In a work context, a student may learn a number of specific job tasks, but still not be perceived as an effective worker.

Thus, Study 2 was designed as an investigation of the social validity of the changes in work behaviors shown by students. The methodology followed the strategy of Voeltz, Wuerch, and Bockhaut (1982) of obtaining videotape vignettes of the student's pre- and posttraining behavior. Then, a group of observers judged whether there were substantial improvements in work-related behaviors.

Method

Participants. Three students who received training at Chevron (Larry, Paul, and Roxanne) were videotaped while performing specific vocational tasks. Three other students were videotaped at another community vocational training site. These students were trained to handle long-distance operator calls on a computerized console at a branch office of AT&T. The characteristics of the program, for example, instructional procedures and schedule, were identical to those in the Chevron program. The students were Adlai (age 19, Learning Handicapped, ABS = 93), Andrew (age 17, Learning Handicapped, ABS = 96), and Karen (age 16, Severe Mental Retardation, ABS = 24).

A total of 27 persons viewed the videotapes. One subgroup (n = 19) was a class of graduate students in special education. The second subgroup (n = 8) was composed of nonhandicapped high school students who had received vocational training on the computer console of AT&T at their high school.

Procedure. Each of the six students was videotaped two times on one of the technological tasks. One videotape was made within the week before training began and another within a week of the end of training, 4½ months later. Each videotape vignette began with the teacher giving the verbal cue to complete a lab task or a phone call. The vignette ended when the student completed the task or could not progress any further. The length of vignettes varied from 30 seconds to 4 minutes.

A single videotape was prepared and edited so that the 12 vignettes were randomly mixed. The observer did not know whether a vignette was a pre- or posttraining sample. The total length of the videotape was 16 minutes and 13 seconds. It was presented in a group format to each of the two subgroups. The observers were told that they would be observing disabled students doing job tasks in work settings. They were told that the videotape would be stopped after each vignette so that they could respond to seven questions. Then, the next vignette was shown and the observers completed the seven questions for it. This procedure continued for the 12 vignettes. The total administration time for the social validity questionnaire was about 40 minutes.

The social validity questionnaire asked questions related to the vocational competence of the observed student (e.g., The person's accuracy in completing the task appeared to be . . . . This person's use of technical equipment was . . .). Each of the seven questions had a 7-point, Likert scale format. An estimate of the instrument's reliability was taken by using the "odd-even" method (Horst, 1966). The reliability estimate for the instrument was a satisfactory .91.

The data were analyzed by separately adding the six pretest vignette scores and the six posttest vignette scores for each observer. Thus, there were 27 pretest and 27 posttest scores. These scores could range from 42 (6 vignettes × 7 items x 1 minimum point) to 294 (6 vignettes × 7 items x 7 maximum points). When scoring, each question was changed so that a lower number indicated less competence and a higher number more competence.

Results

The mean pretraining vignette score was 131.7. The mean posttraining vignette score was 213.9. A one-way repeated measures analysis of variance indicated that the difference between the two groups was statistically significant, $F(1,26) = 29.0$, $p < .001$. Thus, the six students performing technological tasks after training were viewed as more vocationally competent than before training.

CONCLUSIONS

The findings of the two studies support community-referenced vocational training. A heterogeneous group of students with serious vocational handicaps learned a number of technological work tasks in a rather small number of trials and time. They also learned a number of generic work skills, such as the use of public transportation and social/leisure skills, which are just as or more important than the specific job skills. Thus, even though specific work tasks will probably change, general work abilities such as on-task behavior, perceptual-motor coordination, and production rate can be learned in the school years and generalized to adult jobs.

Perhaps equally important is the finding that community training led not only to the acquisition of specific job tasks and generic work behaviors, but also to the students being viewed as more vocationally competent. The social perception of disabled persons is an important variable in their successful integration into natural contexts (Bates, Morrow, Pancsofar, & Sedlak, 1984; Strain, 1983). Most previous work on the social perception of persons with severe handicaps has been done in school contexts (Gaylord-Ross & Peck, 1984). It is important to examine this variable in work settings. For example, in the settings described here the students had to successfully manipulate technological equipment and wear special garb like safety glasses, headsets, and lab coats. The combination of performing challenging technical tasks in technological settings with specialized equipment and garb is likely to lead to a very positive perception of the disabled worker. When parents and teachers of the students observed them in their work training sites, they were both impressed and surprised at the high quality of their performance.

Toward a Model of Secondary Vocational Preparation

Several principles of secondary vocational preparation are encompassed in the program that was used. First, a student should receive a *series* of community vocational training experiences during the secondary years. Each training experience could last a semester or a 3-to 5-month period. The on site training may be from 2 to 5 days per week. The student should spend from 1 to 6 hours per day at the site. Ideally, the student would have three or more training experiences during the high school years. Second, there should be *variation* in the types of work *settings* in the series of training experiences. Thus, the student would be exposed to different work contexts (e.g., factory, office), and data could be collected on the types of jobs and settings the student excels in and prefers. Third, there should be a *range of difficulty* in the job tasks performed at the different work sites. Variation in task difficulty level provides formative evaluation data about the types of jobs that would be most appropriate for the student.

Providing a series of training experiences that vary the job type, setting, and task difficulty is likely to encourage generalization of acquired work skills from the secondary years to adult job contexts. This generalization could be predicted from the "general case" model of Horner, Sprague, and Wilcox (1982), which states that to promote generalization one should train a range of exemplars within each relevant dimension. Thus, if generalization across settings is to occur, one should train the student in a variety of settings that reflects the range of settings in the targeted community. Generalization across task difficulty and job type could be designed in a comparable fashion. It should be remembered, though, that at present such predicted generalization across time to a future job placement has the status of a hypothesis in need of empirical verification. Given the current interest in the *transition* of disabled youth to adult employment opportunities, such longitudinal research should be forthcoming.

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*Considerations and Outcomes in Transitional Supported Employment**

There has been much recent attention given to the transition of youth with handicaps to adulthood (Wilcox & Bellamy, 1982; Will, 1984). Much of this concern was caused by the reported high rates of unemployment of adults with disabilities (U.S. Bureau of Census, 1982). It appeared that existing placement models for adults with disabilities were not successful in addressing a large proportion of this population. Recently the model of supported employment (Rusch & Mithaug, 1980; Wehman, 1981) has emerged; it provides substantially more resources in training an individual at the work site. In addition, the supported employment model conducts job development to procure positions; implements retention strategies to ensure that the individual maintains the position; coordinates employment efforts with the employer, family, and service agencies; and provides long-term follow-up in case problems occur or retraining is needed.

Some of the key factors in implementing a successful supported employment program are:

1) The educator must clearly understand his or her role in the training process. It must be made clear that the educator is there to teach and not just observe the person who has handicaps.
2) The educator must demonstrate to co-workers how to use special prompting and reinforcing techniques to ensure that the worker with handicaps performs accurately and productively.
3) The educator must establish and train social interaction exchanges between the worker with handicaps and the co-workers without handicaps.
4) The educator must explain his role to the co-workers, provide in-service training when necessary, and describe how the educator will gradually fade out of the work site.
5) The educator must explain how there will be follow-up calls or visits to see if the worker with handicaps is doing well. The educator must stress that if a problem arises, the employer should immediately contact the program so that retraining or other job adaptations may perhaps salvage the placement. It must be emphasized that the educator provides a free service to the employer, both for initial training and follow-up retraining when necessary.
6) The educator must stay in close contact with the student's parents or care providers. The supported employment training process should be explained to them. Special accommodations such as transportation to the work site must be coordinated. The educator must make sure that paychecks are received and that S.S.I. deductions are made accurately. Again, parents and care providers should be told to call immediately if there are any concerns or problems with the employment process.
7) The educator should coordinate work activities with representatives from other agencies and programs, e.g., caseworker, special education teacher, rehabilitation counselor. Consideration must be given to portions of the day when the individual is not working. For the student with handicaps who is working part-time and has graduated from school, it may be important to identify a recreational or other kind of day program that will round out and complement the employment experience.

The burgeoning number of supported employment programs (e.g., Rhodes & Valenta, 1985) seem to attest to their success in placing and retaining a wide range of individuals with serious vocational handicaps (Gaylord-Ross, Forte, & Gaylord-Ross, 1986; Gaylord-Ross, 1986). Specifically, Wehman and his colleagues (1982) conducted a follow-up 18 months after their program began and found that 67% of their supported work clients were still employed. Although transition to adulthood should not be evaluated solely in terms of employment (Halpern, 1985), the ultimate validation of placement programs lies in the retention rates of clients upon follow-up.

This article describes a supported employment program serving special education graduates. The focus of the program was to place students in jobs and provide intensive training for them at the work site. Emphasis was placed on implementing retention strategies that transferred supervision to co-workers without handicaps and that promoted social interactions between the employee who has handicaps and the co-workers (cf., Chadsey-Rusch & Rusch, in press). The remainder of this article describes the outcomes of this program and considers issues related to job retention.

OUTCOMES OF THE EMPLOYMENT RETENTION PROGRAM

The Employment Retention Program (ERP) is a model demonstration transition project funded by the U.S. Department of Education. The program attempts to

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place graduating youth with disabilities in permanent, nonsheltered employment. The program serves a wide range of youth with disabilities (those with severe disabilities, learning disabilities, and sensory/physical impairments) who need a supported employment educator at the work site. That is, the students could not be placed with little or no on-the-job training by an educator and be expected to retain their position successfully. Thus the individual supported employment model developed by Wehman (1981) was generally followed.

The Employment Retention Program has been in effect for 2 years. It has served 50 students in the Richmond and San Francisco Unified School Districts. Table 1 summarizes the results of the program with respect to age, type of disability, employer, occupation, wage, amount of work per week, weeks of employment, number of hours provided by the supported employment educator, and employment status.

It should be noted that most of the positions were in fast-food or hospital settings. The two main occupations were food preparation and maintenance work. The median hourly wage was at the minimum wage level. Most of the students worked part-time (median = 16 hours per week). The median length of employment was 5 months.

The analysis of job retention data is complex. Clearly, 30 of the 50 (60%) students continue to be gainfully employed. Of the 20 students who are not employed, 6 were fired, 6 were laid off due to seasonal downswings in the businesses, and 8 resigned (see Table 2). Let us analyze each of these reasons for terminations.

Four of the six students who were laid off were hired as temporary employees around holiday time. The ERP staff knew their employment would be seasonal, but we hoped there was a chance that the company would pick them up on a permanent basis. In two cases, however, we and the business did not foresee that there would be reductions in personnel.

A rather large number of students resigned from positions in which they were demonstrating success. In two cases there were personal reasons (e.g., pregnancy) that required the worker to resign. Yet in six cases the workers quit because they did not like their jobs. They reported that the work was too demanding, that they did not like the hours, or that the work was either too demeaning to them or too unappealing. Part of the responsibility for resignation could be placed on ERP for making a poor individual preference-job match. Yet our staff observed that the students often did not have the stamina to keep working or that they often complained that they wanted a better job. We suspected that if placed in a new work site, many of them would soon start complaining that they disliked that job also. When an individual threatened to resign, we advised the student to continue working for a substantial amount of time (6 months to a year) so that he or she would establish a good work record. We promised that we then would place them in a different position that would perhaps be more to their liking. In some cases this counseling strategy was successful; in other cases it was not.

The most disconcerting cause of unemployment was when an individual was fired. ERP had six firings. There appeared to be no consistent cause for termination (see Table 2). Two students manifested a poor attitude towards their work:

Table 1

Individual Outcome Data for the Employment Retention Program

Age	Diagnosis	Employer	Job	Wage	Hrs./ Wk.	Wks. Empl.	Staff Hrs.	Job Status
21	Mod. MR	Fast Food	Lobby Person	3.35	15	9	20	E
21	Mod. MR	Fast Food	Lobby Person	3.35	12	15	120	F: Attitude, Absent
20	LD, Lupus	Ink Co.	Delivery, Maintenance	3.85	40	38	20	F: Attitude
20	Mod. MR	University	Landscape Aide	5.02	12	8	50	E
19	SED	Fast Food	Cook	3.35	16	10	18	E
22	Mild MR/ED	Pizza Rest.	Kitchen Helper	3.35	16	56	3	E
23	Mod. MR	Fast Food	Lobby Person	3.35	15	22	110	E
20	LD	Priv. Mail Co.	Mail Sorter	3.35	40	12	20	F: Slow
22	SED, Mild MR	University	Food Server	3.35	12	68	5	E
22	Mod. MR	Nurs. Hm.	Diet. Aide	4.90	23	80	180	R
23	Sev. MR	Fast Food	Maintenance	3.35	15	34	200	R
18	Sev. Hand.	Fast Food	Food Prep.	3.35	9	30	45	R
19	LD	Pet Hospital	Kennel Worker	3.60	16	16	4	R
20	LD	Fast Food	Food Prep.	3.55	40	80	20	E
21	LD/VH	Nurs. Hm.	Diet. Aide	4.20	20	90	50	E
20	HI	Print Shop	Printer	5.00	40	55	20	E
19	Mod. MR	Restaurant	Dishwasher Bus boy	4.00	20	26	107	E
25	LH/CH	Mail Co.	Inserter	3.35	40	20	6	E
21	PH	Dept. Store	Tel. Operator	4.00	20	2	81	L
18	VH/LH	Pharmacy	Stock Clerk	4.00	20	14	10	E
15	LD	Retail Store	Gift Wrapper	4.00	20	10	30	L
18	LD	Retail Store	Gift Wrapper	4.00	20	10	50	L
20	LD/CH	Nurs. Hm.	Diet. Aide	4.40	24	8	22	R
18	LD	Fast Food	Fryer	3.35	16	40	5	E
23	Autism	Fast Food	Food Prep.	3.50	15	82	160	E
20	Mod. MR	Church	Maintenance	3.35	12	30	64	R
23	Autism	Nurs. Hm.	Kitchen Helper	4.25	14	42	140	F: Abuse, (Physical)

20	Mild MR	Fast Food	Food Prep.	3.35	20	21	4	F: Abuse (Verbal)
19	LD	Restaurant	Pizza Maker	3.35	12	13	92	F: Absent
19	Mild MR	Fast Food	Maint., Food Prep.	3.35	15	60	16	E
19	LD	Hardware	Clerk	3.50	20	24	6	E
22	SH	Fast Food	Crew Person	3.35	20	40	120	E
19	LD	Fast Food	Food Prep.	3.35	20	2	94	E
19	SH	Retail Store	Stock Clerk	3.35	4	40	20	L
19	SH	Retail Store	Stock Clerk	3.35	4	45	20	E
20	SH	Nurs. Hm.	Laundry	3.35	10	3	38	R
19	Mild MR	Comm. Center	Maintenance	5.00	18	70	33	E
18	Mild MR	Comm. College	Tchr. Aide	5.00	12	65	80	E
19	Mild MR	Fast Food	Maintenance	3.35	10	10	80	R
20	LD	Retail Store	Clerk	4.10	25	55	6	E
20	LD	Bakery	Doughnut Fryer	3.50	15	50	6	L
19	LD	Retail Store	Gift Wrapper	4.00	20	10	40	L
21	SH	Hospital	Laundry	4.35	24	2	48	E
20	SH	Fast Food	Food Prep.	3.35	12	2	24	E
18	LD	Hospital	Janitor	4.35	32	2	30	E
20	SH	Fast Food	Janitor	3.35	8	4	20	E
20	SH	Fast Food	Bussing Dishwasher	3.35	10	2	40	E
22	SH	Fast Food	Janitor	3.35	16	8	128	E
19	CH/LD	Dept. Store	Gift Wrapper	4.00	20	10	80	L
		Hospital	Typist Volunteer		20	10	65	E
Median 20				3.35	18	21	30	
Range 15-25				0-5.02	4-40	2-90	3-200	

NOTE: LD = learning disabled; SH = severely handicapped; CH = communication handicapped; Mild MR = Mildly Mentally Retarded; Mod. MR = Moderately Mentally Retarded; Sev. MR = Severely Mentally Retarded; VH = Visually Handicapped; SED = Seriously Emotionally Disturbed. E = employed; F = fired; L = laid off; R = resigned

Table 2
Placement, Retention, and Termination Data

No. Students Placed	No. Students Working	% Retained
50	30	60%

	Reasons for Termination	
Fired	Laid Off	Resigned
6	6	8

		Reasons for Firing		
Absenteeism	Slow Rate	Parental	Attitude	Aggression
2	1	1	2	2

They fooled around on the job or did not take directions well. Another person worked too slowly and his parent wished to withdraw him from the work site. In two cases excessive absenteeism was a major contributing factor. Another cause for firing was verbal or physical aggression. Because of the small sample of six cases and the lack of a consistent trend in the causes for termination, our findings cannot be systematically compared to larger data bases that have analyzed reasons for terminations (cf., Greenspan & Schoultz, 1981; Hill, Wehman, Hill, & Goodall, 1985).

It might be useful to illustrate the cases of two individuals who were fired. Mel, who was severely mentally retarded, had been working fairly successfully for 8 months. His initial acquisition of the job tasks was challenging because he was extremely dependent on prompts from another person to move from one task to another. The supported employment educator had some success in fading prompts but eventually developed a system whereby co-workers would prompt Mel, when necessary, to move to the next task. The only problem was that there was considerable co-worker and supervisor turnover at the restaurant. The educator had to spend much time retraining co-workers to the prompt system. Most problematic, though, was that the new supervisors were not sympathetic to or familiar with the employment of persons with disabilities. The supervisors stated that Mel was not performing at an adequate response rate. They were unwilling to make job accommodations. At the same time the student's mother perceived that her son was receiving negative feedback about his job performance. Soon the mother decided to withdraw Mel from the position. We viewed the negative termination as partially due to low production rate and partially due to parental withdrawal.

The case of Earl is also instructive. Earl is autistic and had worked successfully as a kitchen helper in a nursing home for 10 months. He learned his cleanup tasks with little difficulty. Much of this success could be attributed to Earl's community vocational training in kitchen settings during high school. Throughout his 10 months of employment, however, Earl would have occasional outbursts during which he would first yell and then bang his fist on tables. The supported employment educator had established a successful behavioral program so that when Earl began to shout and make bizarre body movements, he would be required to sit on a chair in the corner of the same room until he went 5 minutes without disruptive behavior. This "required relaxation" program was successful in reducing instances of physical violence to about two per month. Having Earl sit in the corner at the first sign of any vocal or motor disruptiveness usually prevented the behavior from escalating to punching objects. The educator successfully taught the behavioral program to a significant co-worker. Thus there was successful transfer of stimulus control. Unfortunately, one day a new and supportive supervisor observed Earl while he was emitting a number of disruptive vocal and motor responses. Trying to help, the supervisor approached Earl to calm him down. As he came within the student's space, Earl struck the supervisor. Earl was immediately fired.

The cases of Mel and Earl are interesting and important for a number of reasons. First, both cases are considered failures in our evaluation data base because they were negative terminations. Second, the cases also may be considered successes because Mel and Earl are people with challenging learning and behavior problems who nevertheless were employed for a rather long time at a worksite. They could never have been so employed without an intensive supported work program. Third, in spite of negative termination, the accomplishment of about 9 months of successful employment should set the stage for future placements and, we hope, even more protracted tenures. Fourth, though a very powerful instructional technology was implemented with the students, the workplace proved to be a very challenging environment that presented many obstacles to the students' vocational goals. That is, there are many factors out of control of the educator in the social ecology of the workplace (cf., Chadsey-Rusch & Rusch, in press). An effective behavioral program may be instituted, but high staff turnover, of course, increases the chances of inconsistent behavioral prompting.

CONCLUSIONS

The Employment Retention Program appears to be a fairly successful transitional supported employment project. Although only 60% of the total sample were employed at the time of the follow-up, one might analyze the outcome data in another way. If lay-offs were considered out of the control of the individual and the project and were eliminated from the data base, then there was a 68% (30/44) success rate of placement and training. Furthermore, if resignations were also dropped from the analysis because the program did successfully place and train these individuals, then 83% (30/36) of the students could be considered successfully placed. In only 17% of the cases did the training technology fail to teach the individual to perform successfully on the job. Whether a 60%, 68%, or 83% indicator of program success is used, it is felt that many of the students not presently working made valuable gains in their vocational development during their experience on the job. It is likely that many of these individuals will be employed in the future

The supported employment program could be viewed as rather intense (or costly) because of the number of hours needed to carry out the placement and training process. The median number of hours given by the supported employment educator was 36 per placement. Yet O'Brien & Stern (in press) have shown that supported employment programs are cost effective. Also, almost all of these students would have no chance of successfully working without such a program. In previous educational settings these students required continuous supervision by an educator. The ERP succeeded in fading an educator from the work setting, transferring supervision to co-workers, and having the individuals with handicaps work independently. This transition process is quite exacting and requires continual follow-up to meet problems that may arise. In fact, some individuals with disabilities may require ongoing supervision by an educator at the work site (Rhodes & Valenta, 1985). Still it must be remembered that the employment of persons with serious vocational handicaps will require much support and that programs like ERP will not generate large numbers of placements, as do more traditional rehabilitation programs. Almost all of the ERP students would not have been considered employable by traditional rehabilitation standards. Part of the schism between traditional and more recent approaches to employing workers with disabilities revolves around the number of placements, the abilities of the people placed, and the amount and nature of the support needed for successful employment. Programs like ERP are not clearinghouses for placing large numbers of relatively employable persons. Rather, they are intense support systems that enhance the work opportunities for a growing number of adults who were previously viewed as incapable of nonsheltered employment.

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The Community Vocational Training Program: A Transition Program for Youths with Mild Handicaps

The Community Vocational Training Program (CVTP) is a transition program that trains and places high school seniors with mild handicaps in permanent employment and postsecondary schools. The CVTP has functioned over the past 3 years in search of a viable service delivery model that will enable a greater percentage of youths in this group to meet the challenge of going to work or college and overcoming the high likelihood of unemployment and a dependent or norm-violating lifestyle.

Taken individually, each aspect of the CVTP has previously demonstrated success in either improving the school-based performance, training the work behaviors, or developing social skill of students with special needs. By creating an experiential whole for the student intern out of the concept of transition and then integrating the best of transition-oriented curriculum in all three of these areas, the program has had a powerful influence on the postsecondary outcomes of the CVTP interns. The key components of the CVTP are (a) a willingness to make demands of students, beginning from the first day of recruitment activities, (b) an intensive, community classroom supervision at the work site, (c) the school-based Employment Skills Workshop, and (d) the personal commitment of the staff, during and beyond the last year of high school.

It is a well-known fact that people with handicaps are a significantly underemployed group (Habeck, Galvid, Frey, Chadderden, & Tate, 1985; McCarthy, 1985). Furthermore, more than 80% of the special education population is classified as mildly handicapped (Edgar, 1987; Edgar & Hayden, 1985; U.S. Department of Education, 1985).

Makers of federal policy recognize and seek to rectify this inequity. The adoption of school-to-work transition planning as a priority has prompted a revitalization in the fields of special education, *vocational* education, and rehabilitation (Will, 1984). The supported employment movement has responded to this mandate, enabling more employment of youths and adults with severe handicaps in nonsheltered employment.

Certainly, if individuals with severe handicaps need services such as development and intensive on-the-job training to be employed in nonsheltered settings, then many individuals labeled mildly handicapped may also benefit from supported employment service, or a variant thereof. In fact, some empirical and anecdotal reports show poorer job retention rates for people with mild handicaps than for those with severe handicaps (Hill, Wehman, Hill, & Goodall, 1985; Zivolich, 1987).

Because of their nonhandicapped appearance and greater capabilities, youths with mild handicaps who have a serious *vocational* handicap (Gaylord-Ross, Forte, Storey, Gaylord-Ross, & Jameson, 1987) may be more likely to act out the frustration of unemployment and exclusion from the mainstream than to passively accept what the system offers. For example, juvenile crime is one response that places such an individual in the hands of the justice system and substitutes obedience to the law for meaningful employment as the priority of service delivery. The supposed advantage that youths with mild handicaps have—greater ability to make choices—in reality acts to deflect special services when those youths have "aged out" of the educational system and opted for existence on welfare (Zigmond & Thornton, 1985).

Involvement in crime, teenage motherhood, welfare frequently signifies the absence of a work ethic, the rejection of educational opportunity, and the reinforcement of a cycle of poverty. At best, many youths who have handicaps or are disadvantaged find themselves in entry-level jobs with no future, their well-meaning efforts eroded by a peer culture that more easily assimilates criminal or welfare lifestyles. Viable opportunities for legitimate lifestyles that include reasonably well-paying and challenging jobs with a future could help make a significant change in the lives of these young citizens. This change would be measured by the extent of opportunities in the labor market and by the extent that education prepares youths to take advantage of them. The research presented here describes a vocational education program that trains youths and helps them to enter the labor force.

THEORETICAL FOUNDATIONS

Several educational approaches developed in recent years have demonstrated success in different aspects of career education. This section very briefly highlights some of the findings and methodologies that play a part in CVTP.

Community vocational training that adapts some of the principles of supported employment has shown considerable success in teaching students with mild handicaps specific job tasks and general work behaviors (Brolin, 1982; Gaylord-Ross et al., 1987). For example Gaylord-Ross, Forte, and Gaylord-Ross (1986) developed a community classroom at a real work site. An instructor conducted vocational activities with a group of five students with serious vocational handicaps. As the students became more proficient, the instructor decreased the intensity of supervision. Other projects throughout the nation have demonstrated the success and

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viability of supported employment for individuals with severe handicaps (Bellamy, Sheehan, Horner, & Boles, 1980; Brown et al., in press; Mank, Rhodes, & Bellamy, 1986; Wehman & Hill, 1985). The CVTP uses supported employment principles ranging from interventions consisting of simple proximity of the instructor to fine task analysis and prompt hierarchies to the successful approximation of generic work habits such as punctuality and the negotiation of public transit to work.

The objective-based approach of special education is utilized as well; interns must meet the criteria of at least two vocational and one social objective during the course of the semester. Objectives are behaviorally stated and data recorded to measure when they have been met.

Re-ED (Re-education of Emotionally Disturbed Youth)(Hobbs, 1982) presents an overall philosophy and approach to the deinstitutionalization of troubled children. Its definitions of emotional disturbance imply ecological methods that interact with all of the relevant people in a youngster's environment and thus engender maximum social support for positive outcomes. The youth with handicaps is only one member in an ecosystem of many players (peers, family, school, and employers) who together determine which behaviors will be tolerable and the consequences of such behaviors. The CVTP is the first program of its kind that integrates Re-ED principles in vocational settings by design, and this emphasis is discussed in detail elsewhere (Siegel, in press). Basically, Re-ED concepts of team building, problem solving, ecosystematic intervention, empowerment of frontline staff, and long-range enablement planning are all part of CVTP.

Social-skills training (Goldstein, Sprafkin, Gershaw, & Klein, 1980; Hazel, Schumaker, Sherman, & Sheldon-Wildgen, 1981) offers a set of techniques that are useful in training behaviors that increase employability through the instructional rehearsal of social behavior. Practice of such skills on the job site can induce patterns of behavior that will help integrate youths into the social ecology of the workplace (Chadsey-Rusch & Rusch, 1988). In CVTP, social-skills training is intended to help interns achieve acceptance in the workplace, to enable them to seek or provide instruction when needed, to help them handle the sometimes negative or impersonal climates they will encounter, and to teach them to perform well in a job interview. Strategies are now being formulated that will train interns to generalize social skills learned in the Employment Skills Workshop to the workplace.

Finally, peer counseling (Varenhorst, 1980) offers basic counseling skills and insights to students through a group exercise format. Adaptation of these methods can provide a way to approach issues of motivation and generate work-ethical behavior. Motivation is a central issue for youths with mild handicaps, as the entry-level position that may be a necessary step in the development of their careers is frequently less rewarding than other immediate options such as crime or welfare. The need for a curriculum that addresses motivation and long-term career planning is essential for youth who are reluctant to accept entry-level jobs. An effective curriculum oriented around group process may be the best way to generate those intentions in low-achieving youths.

By combining the approaches described here and integrating them with existing services, the staff of CVTP has developed a multifaceted program that can help make an effective transition to permanent, competitive employment for youths with mild handicaps. The sections that follow present a more detailed description of the program and a report of the postsecondary outcomes of its participants.

RECRUITMENT

The Program Manager is a teacher employed by the San Francisco Unified School District (SFUSD). The Program Manager runs CVTP on a day-to-day basis, teaching the Employment Skills Workshop and supervising the on-site instructors at each of the three work sites. At each comprehensive public high school there is at least one special education teacher who is familiar with CVTP and has personal contact with the Program Manager. During CVTP's pilot year, the staff worked closely with only two high schools in order to develop the best style of communication and referral. Since that time, it has grown to serve seven comprehensive, two alternative, and one vocational high school, all part of the SFUSD (see Figure 2).

Teachers refer seniors to the semester-long training program. The five criteria for referred students are motivation to work, parent support, good attendance records, some prevocational or vocational training, and some ability to alphabetize (for clerical positions). In a situation with pervasive and effective career education at all grades, virtually all students with mild handicaps would qualify. However, at this point it is required that students meet at least three criteria if they are to apply. The intent of the criteria is to communicate a sense of expectations to the students and to the referring teachers and to provide some rough initial screening that will avoid disappointment and failure in the program.

By placing such demands upon the referring teachers, CVTP truly functions as a "bridge" from school to work. Given some competence in the generic criteria for referral, an intern is likely to succeed. These criteria are based upon what employers have most frequently noted as generic work behaviors essential to employability (Siegel, in press). CVTP, in this instance, presents the demands of the employer in an educational framework that on one hand connects students on the verge of work readiness with employers and on the other hand encourages teachers to teach to those criteria in their classrooms.

Referred students are given a preliminary interview time and place (the Vocational Skill Center, a school district setting), and a tip sheet on good interview behaviors. At this interview they meet the CVTP Manager, who questions them on their interests and goals. Students who can arrive at this interview on time will pass the interview; that is the only criterion. (A student with extremely aggressive, immature, or withdrawn behavior may be screened out at this time.) The instructor and intern candidate decide which of the employment sites is most suitable, and each is given the address and an interview time with at least one of the sponsoring employers.

Employers from the sponsoring sites interview approximately two intern candidates for each available position each semester. They make the final selection of interns. This feature of the program increases the employers' commitment to the chosen interns and their overall involvement in the program. It also replicates the competitive selection procedures of all high school graduates.

This selection procedure raises issues of "creaming" and challenges the "zero-reject" philosophy of special education. However, the procedure has been critical to the success of the program. If a student with mild handicaps has not learned how to arrive on time by the senior year of high school and does not believe that work experience may be related to future success, then that student has a long-term problem that usually cannot be remediated during the last semester of high school. It is currently beyond CVTP's reach to reverse years of learning if the most basic habits of attendance have not been taught; to accept a student who has not achieved this minimal goal is to set the student up for failure.

Second, CVTP encourages and demands autonomous behavior from its recruits, much like the Adaptability Instructional Model (Mithaug, Martin, & Agran, 1987). That is, as a transitional program, CVTP presents choices to students that are more similar to the work than to the educational world. The program's credibility with employers over the years has been sustained by the good attendance habits of its interns and by the host employers' investment in the choice of students.

Finally, students who are more than one semester away from graduating are encouraged to reapply to the program. Also, as the credibility and number of training sites increases, the program is able to schedule more than one interview for some candidates. Thus, a student not chosen at one site may still succeed in a second interview. Even at this early stage, the program has been able to find a training site for all but a few students who have been able to make it to their interviews on time. Eventually, all students with mild handicaps could be served in a community classroom. However, this will not come by convincing employers to tolerate substandard work behaviors, but by teaching above-average work habits to all students long before their senior year.

Before the training semester begins, all selected interns are required to attend a meeting with the staff and to bring with them at least one other person among their family and friends who is committed to their future beyond high school. If not a parent or guardian, an older sibling, spouse, close relative, family friend, girlfriend, or boyfriend can be identified as the caring party. The attendance of one of these significant others is absolutely required if the intern is to begin the program. At this meeting, the program components and some of the realities of the job market are explained. Questions are answered, and the staff is introduced. The basic promise of CVTP is made: If the intern meets the requirements and successfully completes the program, the staff makes a lifelong commitment to the career development of that intern. This includes a job club, connection to adult service providers, assistance with postsecondary education, advocacy on the job, and assistance in future career changes[1]. The support persons are requested to provide emotional support to the intern, to make employment a priority in the home (e.g., scheduling medical and personal commitments around the internship), and to help with on-the-job grooming needs and social skills. Ongoing contact with the support people is promised.

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[1] Postsecondary services are provided by a Transition Specialist, a member of the CVTP team, who works in collaboration with the California State Department of Rehabilitation

To summarize, the recruitment phase of CVTP establishes the fact that the program will make demands of the interns, of the school personnel who refer candidates, and of at least one other person in the intern's life who is committed to his or her postsecondary success.

ON THE JOB

The interns (from 5 to 12 at each site) are dismissed early enough from school to arrive at their job site in time to eat lunch or to socialize with co-workers. They work 3 hours a day, 4 days a week. Initially, all interns are under the supervision of the site instructor, who places them in job tasks. Presently the sites are an insurance company, cafeterias in five different corporate offices (all in the same area), and a company that rents and sells computers and audio-visual equipment.

Generic job-keeping skills taught at all sites include attendance, punctuality, appropriate dress and grooming, handling authority, giving instructions, asking for help and following instructions, honesty, and responsibility. The interns at the insurance company learn various combinations of data entry, distribution, typing, filing, paper shredding, telephone answering, and other clerical tasks. Interns in the corporate cafeterias learn food preparation, dishwashing, line serving, and basic maintenance chores. The audio-visual and computer company offers training in equipment maintenance, inventory, warehousing, and general maintenance tasks. All these tasks are taught, but depending upon placement within the company, only some of the interns will learn all of the tasks.

After the first week, each intern has a conference with the onsite instructor, who has been making a personal assessment. Interns are observed for competence in attendance, social skills, work quality, and work quantity. Normative rates are collected or approximated by interview and by observation of the actual employees on the site. Objectives focus on those intern behaviors that are most substantially beneath the standards of performance maintained by the actual employees. Both co-worker and teacher observations are used to determine this assessment. At least two vocational objectives and one social objective are established. The interns have 2 weeks in which to meet those objectives. If met, they begin to earn a minimum wage stipend (provided by Project WorkAbility, a collaboration of the California State Department of Education and the Employment Development Department). Project guidelines prevent differential pay situations at the same site, so interns who are not meeting objectives but are making progress are also put on the payroll and coached by the staff to increase the level of progress towards criterion levels. Those interns who have not made any progress towards meeting their objectives are terminated.

Of the 61 interns accepted into the program, only 2 have been terminated (one for dishonesty related to a theft, and one for inappropriately touching an employee). The Program staff believes that it is the commitment to follow through on this policy that helps maintain the high performance levels of the interns. Terminated interns are encouraged to reapply the following semester and are referred to other vocational programs as well. The staff believes there are times when termination from a job situation is the best educational experience a young person can have. Tolerance of limit-testing is significantly lower in the workplace than in the school; and any transitional program must, in some manner, address and teach this reality.

As the interns are continuously assessed by the on-site instructor, those who are more competent and independent are "farmed out" to other departments, while those interns needing more supervision stay within the immediate vicinity of the instructor. At all sites, special relationships have developed with certain employees, and interns are assigned to employees known to be reliable benefactors (Edgerton, 1967; Gaylord-Ross, 1987) for interns who show certain attitude problems or where cultural/ethnic identification with that employee is an asset.

By the third or fourth week, interns with the highest levels of independence are sometimes transferred to satellite sites. These are other local employers who either provide the possibility for employment or the potential as a future host site. The on-site instructor's job is to fade supervision, transferring it systematically to the natural supervision of the host site.

Occasionally, behavioral interventions have helped to improve intern performance. One intern was able to stop his distracting behaviors and increase his rate on a clerical sorting task when given the opportunity to time himself and chart his performance. Numerous instances of counseling, on-site roleplays, task redesign, task analysis, and employee-sponsored seminars have all contributed to making the experience truly educational without sacrificing the demands and climate of a real workplace.

While an employer will occasionally hire an intern, job placement at the training site is not assumed. The sites function primarily as training sites, though the staff does engage in constant advocacy for placement. When interns are near graduation, they are allowed to leave the worksite if they have a job interview. And if they can obtain employment, they are released from the CVTP site to take a job during the afternoons. Also, the on-site instructors, being freed from direct supervision by the seventh or eighth week of the semester, provide "supported job search" services to one or two interns a day during work hours. They accompany interns to places where employment is sought. Then, like the community classroom, they fade their help as the intern becomes competent in job search skills such as asking for an application and an interview, having a job interview, and selecting places to approach for employment. This activity increases the likelihood of placements, and it allows spring semester interns to get a head start on the youth rush for summer jobs. The community classroom, which is the central component of CVTP, thus presents a supervised work experience in a real work setting. That setting is educationally enhanced by the use of learning by objectives, variable levels of supervision, on-site benefactors, and data-based approaches to teaching job skills. Because it is an actual workplace, interns experience the consonance between the demands made by the on-site instructor who represents the program and demands made by employers. Generally, CVTP interns are able to conduct their own job searches, and supported job searches are a way for them to learn this skill with some initial support.

EMPLOYMENT SKILLS WORKSHOP

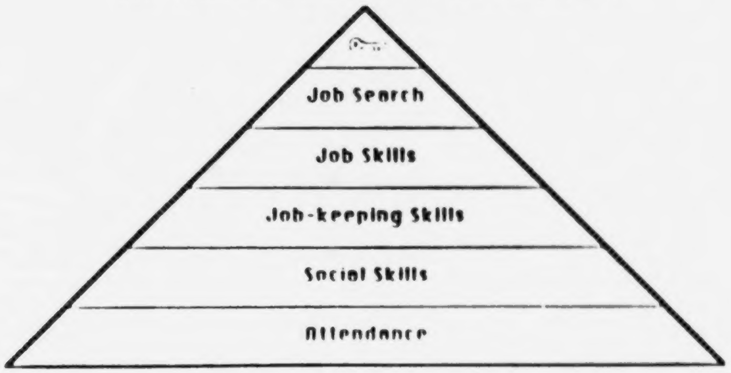
One day a week, groups of interns meet at the SFUSD's Vocational Skill Center to attend the Employment Skills Workshop. There, a variety of curricula address their transitional needs. At the orientation meeting, interns are presented with the CVTP "Pyramid of Transition" (see Figure 1). The value of each skill is presented as depending upon the mastery of the previous one, starting with on-the-job attendance and followed by social skills, job-keeping skills (Anema, 1978), job skills, and job search skills. That is, it will be of no value to have job search skills (e.g., interview, use of agencies, self-family-friend network), unless attendance, social, job-keeping, and job skills are mastered.

On-the-job attendance and basic issues in work ethic, motivation, career development, self-esteem, and so forth are addressed in a series of informal lectures and discussions. It is essential that these students develop their own rationale for going to work and can articulate their views in a nonjudgmental and supportive atmosphere. Lecture/discussion topics include "What Are Good Attendance Habits?" "Being a Pioneer, a Warrior, and a Hero"; "The Six Survival Skills"; "The CVTP Pyramid"; "What Does a Job Offer Besides Pay?" "How Does the Capitalist System Work?" "How is School Different from Work?" "Why Do We Supervise You So Closely?" "Realities of the Work World"; and "Why Do We Teach Social Skills?"

These discussion topics are closely integrated with an affective curriculum that builds the team through group process. Excercises in welcoming a stranger, observation skills, reflective listening, values clarification, honest and direct feedback, exchange of positive remarks, expression of feelings, and other peer counseling activities (Varenhorst, 1980) serve many purposes. Among them are the opportunity to begin forming adult relationships and to transcend the conventional

Figure 1

CVTP Pyramid of Transition to Permanent Employment



teacher-student dyad. The group develops a sense of unity and common purpose. By sharing feelings, trust is established. The affective curriculum thus sets the stage for the social skills training role plays to come, which succeed best in a trusting and comfortable atmosphere.

The social skills training curriculum takes a behavioral approach to role plays of social skill situations (Goldstein et al., 1980; Hazel et al., 1981). Social skills are assessed on the job by the on-site instructors and the co-workers. The social skills lessons are adapted according to the various social ecologies of the work sites (Chadsey-Rusch & Rusch, 1988). Lessons include "Ordering Job Duties," "Following Instructions," "Giving Instructions," "Asking for Help or Instruction," "Giving Negative Feedback," "Accepting Negative Feedback," "Giving Positive Feedback," and "Starting a Conversation." When feasible, actual situations occurring on the job are brought into the social skills training group.

In the opening weeks of the semester, interns learn basic computer, cash register, typing, and 10-key calculator skills. The second phase of this component is the preparation of a resume and personal data sheet, job applications, job search skills, and role-played job interview skills. Guest speakers from personnel departments and adult service agencies familiarize the interns with their services. Interns meet with their case worker at the Department of Rehabilitation to become a client. Employers are brought in to do simulated job interviews with the interns, who are rated and given immediate feedback.

Job search skills are taught last. They are presented only when the prerequisite pyramid of job and job-keeping skills has been constructed. Interns are trained to keep a record of job leads, to prepare for interviews, and so forth. This preparation is reinforced by the opportunity to go out on supported job searches as previously described. The self-family-friend network (Hasazi, Gordon, & Roe, 1985) is taught as the best source of job leads. However, the typically low socioeconomic status of a CVTP intern often limits the productivity of that network, so other methods are taught as well. These include following job leads, using the Department of Rehabilitation, making cold calls, using walk-in methods, advocating for oneself at the training site, filling out applications, and preparing resumes. Several CVTP graduates have proven to be dependable, long-term employees, but they have required job development and advocacy from the staff—supported employment services—in order to obtain a position.

STAFF ROLES

The critical staff roles of CVTP are the program manager and the on-site instructors. The CVTP Manager's role was described above. The on-site instructors fulfill a variety of functions. Their on-the-job instruction is central. Their effectiveness is contingent upon emphasizing to the co-workers that their on-site instruction fades, and natural supervision should not become dependent upon the mediation of the on-site instructor.

The on-site instructor develops a crucial relationship with the intern and with the intern's family. In the event of a serious attitude or attendance problem, the ability of the instructor to rally a circle of support and correction around the intern will frequently determine the intern's ability to survive the crisis and grow. Relationships with the teachers and counselors at the various schools are often crucial to intern success as well. Conflicts over school commitments and incongruous behavior across sites must be reconciled and negotiated.

The program has a strict policy on attendance, monitored by the on-site instructor and implemented by the CVTP manager. Interns are terminated if they do not attend. This communicates the program's standards to the student and establishes credibility at the worksite by addressing poor work behaviors before they become a problem for the employer.

The instructor is also the program's liaison to the employer and must maintain the credible status of the interns and the program. The instructor advocates for job placement and resolves any difficulties that may arise. It is the on-site instructor's duty to educate the co-workers about the possible effects of mild disabilities on individuals so that co-workers may make successful accommodations. Indeed, after 3 years in a workplace, the program's staff has identified several understanding and supportive co-workers. While the expectations of above-average, generalized work behaviors placed on the interns have not diminished, the host sites, over time, approach the middle ground where educational and work standards are effectively balanced. In other words, while interns are expected to meet and exceed employer standards, by eventually being accepted into the social ecology and even hired at the job site, those standards will be modified.

In summary, the staff makes a personal commitment to a successful outcome for CVTP interns. Interventions and teaching are understood as components of that commitment. Central to the performance of staff roles is understanding the handicap an intern may have. This helps the staff person discriminate between the intervention that is enabling an intern to function autonomously (e.g., providing a job accommodation, advocating with an employer, job developing), and an intervention that may only reinforce a learned helplessness and actually impede the intern's course towards independence (e.g., tolerating poor attendance habits or poor social skills).

OUTCOMES

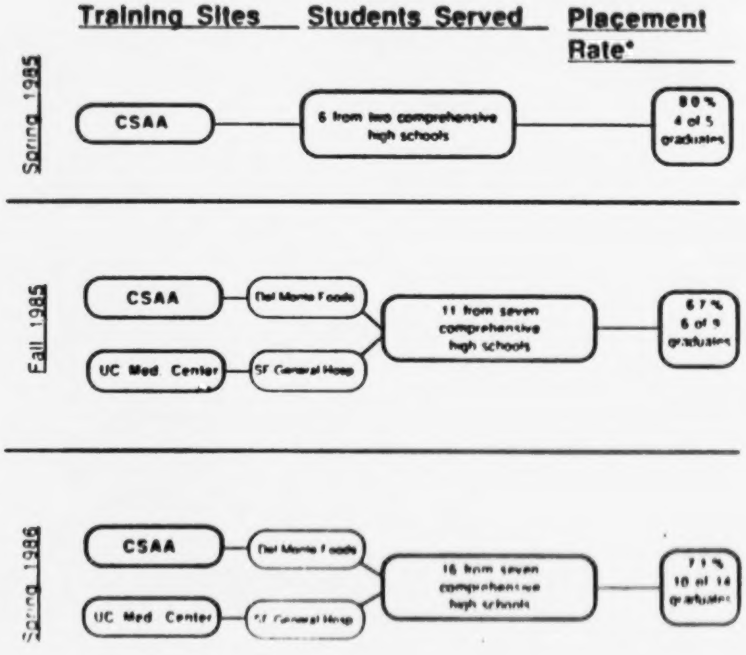
There are a number of ways to evaluate the effectiveness of vocational transition programs. Static figures on a group can be extremely misleading (Kernan & Koegel, 1984). For example, one intern was incarcerated for 9 months following the program. Three others had children. Two interns did not pass all their classes and returned to school the following year (but one of those maintained part-time employment). One intern suffered a psychiatric disorder (but is now employed full-time). One intern returned to Central America to visit family, but is now back in San Francisco and working full-time. Also, the program has been called upon to occasionally serve a junior class student who is at risk of dropping out. In fact, all three juniors who participated in CVTP have returned to complete their education.

Given the limitations of summary statistics, one approach is to monitor the development of program components over time. Figure 2 displays the development of CVTP in terms of its staff, training sites, and number of students and schools served. It can now be observed how all of the components have expanded over the 3-year period, providing a secondary measure of success.

The most critical outcome variables are the number of interns placed into permanent employment or postsecondary education and the percentage of school leavers who are maintaining employment. These retention data may be portrayed in several ways. The data are maintained by the transition specialist, who at minimum makes a quarterly call to update a former intern's status, and in other cases may assist in the casework, college enrollment, or job training of a former CVTP intern. In tracking each intern, eight possible categories of involvement are recorded quarterly. At the time of this writing, 85% (44) of the interns in the labor force were employed or enrolled in postsecondary education. Of these 44, 4 were in their original work experience sites. This retention rate is a sample index taken at a single point. The index should be representative of a more thorough calculation of the proportion of time employed over a placement period (Gaylord-Ross, 1987; Wehman et al., 1982). Of the interns employed, 36% are part-time workers, 41% are full-time workers, 14% are full-time students, and 9% represent a combination of work and school that adds up to a full-time commitment. Table 1 enumerates the types of jobs, schooling, and employment sites for the participants.

Figure 2

Development of the Community Vocational Training Program

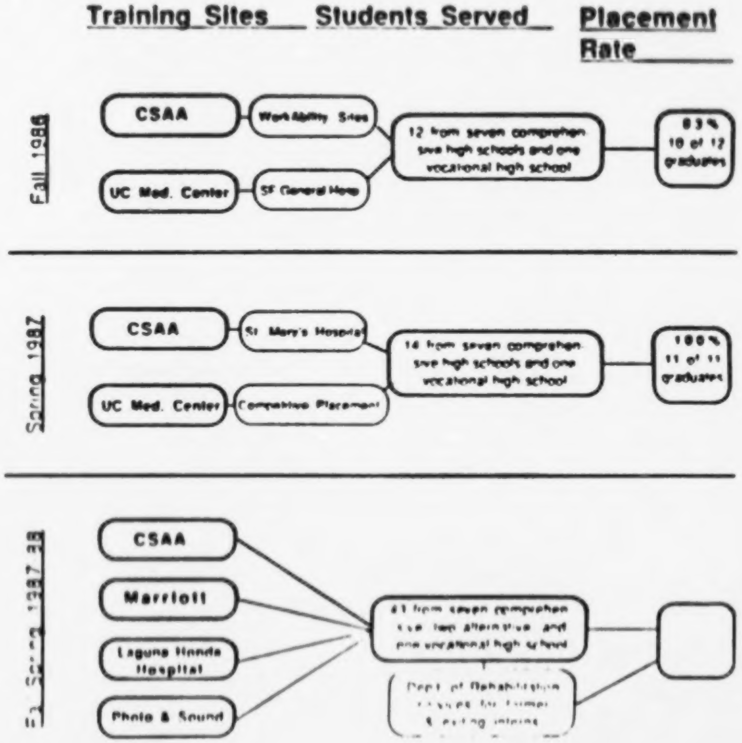


Training Sites
Students Served
Placement Rate*
Spring 1985
CSAA
6 from two comprehensive high schools
80% 4 of 5 graduates
Fall 1985
CSAA
Del Monte Foods
UC Med. Center
SF General Hosp
11 from seven comprehensive high schools
67% 6 of 9 graduates
Spring 1986
CSAA
Del Monte Foods
UC Med. Center
SF General Hosp
16 from seven comprehensive high schools
71% 10 of 14 graduates

*The placement rate is based upon the number of graduates who are in the [illegible]

Figure 2

Continued

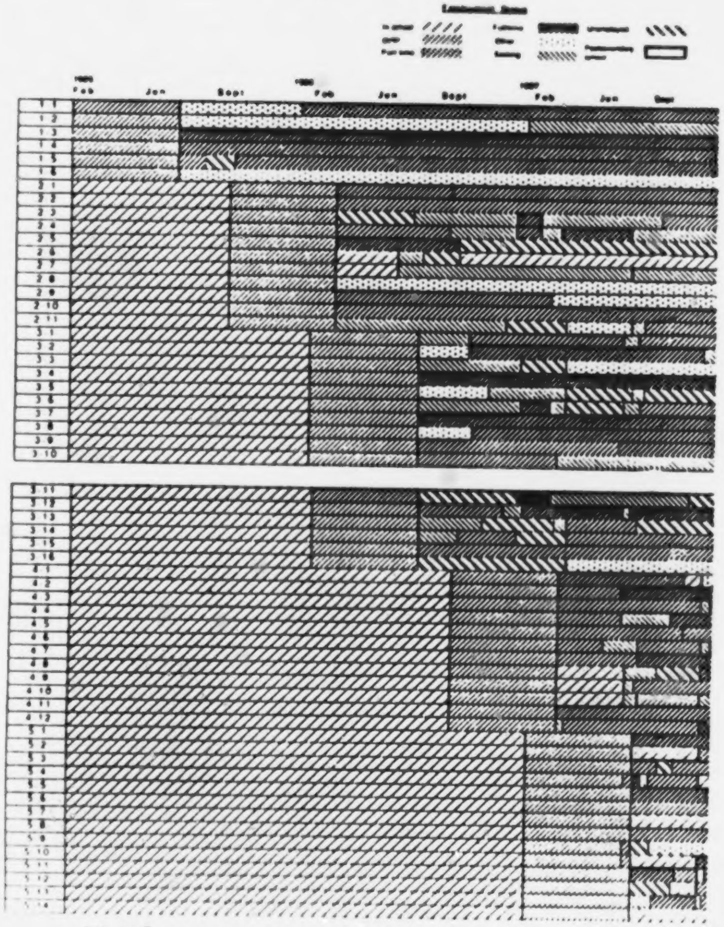


Training Sites
Students Served
Placement Rate
Fall 1986
CSAA
WorkAbility Sites
UC Med. Center
SF General Hosp
12 from seven comprehensive high schools and one vocational high school
83% 10 of 12 graduates
Spring 1987
CSAA
St. Mary's Hospital
UC Med. Center
Competitive Placement
14 from seven comprehensive high schools and one vocational high school
100% 11 of 11 graduates
Fall, Spring 1987-88
CSAA
Marriott
Laguna Honda Hospital
Photo & Sound
41 from seven comprehensive, two alternative, and one vocational high school
Dept. of Rehabilitation services for former & exiting interns

DISCUSSION

The Community Vocational Training Program is a school-based transition program that trains and places youth with mild handicaps in permanent employment. The program has expanded to serve students from all of the comprehensive high schools in a large, urban school district. The program may be deemed successful because more than 90% of its participants are currently employed or in school. The employment rate compares favorably with the approximately 60% to 66% employment rates reported by Edgar (1987) and Hasazi et al. (1985) for school leavers with mild handicaps.

Figure 3
CVTP Follow-up Data



We believe the program is successful because of its intensive, supported employment characteristics, which are needed for students referred to CVTP. The key components of CVTP were (a) a willingness to make demands of students, beginning with the first day of recruitment activities, (b) an intensive, community-classroom supervison at the work site, (c) the school-based employment skills workshop, and (d) the personal commitment of the staff, during and beyond the last year of high school.

The instructor could carefully teach critical job tasks and general work behaviors at the employment site. As the interns became more proficient and independent in these skills, the instructor would fade out and turn supervision over to the co-workers. In turn, the employment skills workshop offered an opportunity to practice key social behaviors. The targeted social behaviors, like accepting negative criticism, were not selected in a vacuum. Rather, they were identified from actual situations that had arisen at the work sites and from needs identified by current research. The employment skills workshop also offered an opportunity to

Table 1
School and Work Outcomes for CVTP Graduates in Order of Frequency

Outcome	No. of Graduates
Employment	
Food service worker	13
Clerk, secretary in office building	8
Warehouse worker	5
Maintenance, janitorial	2
Retail sales	2
Manufacturing, distribution	2
Security guard	2
Domestic, hotel maid	1
Grocery store checker	1
Hospital worker	1
Video cable installer	1
Temporary office worker	1
Airport porter	1
Shuttle driver	1
Total	41
School	
Liberal or remedial studies: community or 4-year college	9
Rehabilitation training: typing, data entry	1
Nursing school: community college	1
Body work school	1
Total	12

teach related vocational skills like job-seeking through instructional procedures such as a job club. The importance of employment skills workshops will grow in the face of basic academic requirements that tend to limit or eliminate vocational training offerings.

The personal commitment of the staff, which included relationships with the family and referring teacher of each intern, was critical. It enabled the instructor to get an in-depth sense of each intern's identity, aspirations, and abilities. The coordination of family, school, intern, and employment concerns by the instructor created a respectful ring of support for the intern to pursue work or college with determination and self-confidence.

CVTP's operation is consistent with the Re-ED philosophy (Hobbs, 1982). Many aspects of the program reflect its influence (for example, group process and peer counseling in the employment skills workshop, active involvement of the family and friend support system, and fading of services as the likelihood of success exceeds the likelihood of failure). These features plus three basic principles summarize the Re-ED approach in vocational settings.

First is the idea that youths are competent. Given a clearly articulated demand and a conscientiously engineered opportunity to succeed, they will. Second, emotional disturbance, indeed any difficulty in coping with demands of mainstream education or work, is most correctly viewed as a discord in the environment, and not as an illness or deficit residing in the individual. Though the standards of the work world must be recognized and respected, so-called "mild" handicaps can in fact be accommodated through creative and dedicated efforts by a professional in a liaison role. Finally, the first two goals directly imply that postsecondary success can be reached only when all the key players in an intern's life—from the school, family, community, and workplace—are in accord. The educator usually will not be able to engender success with interns unless this entire ecosystem is taken into account. When dealing with troubled situations, the best efforts and alliances with any of these actors are likely to be sabotaged by the lack of support from another. This goes a long way toward explaining burnout and the all-too-frequent failure of social services. When in fact this mesosystematic intervention is in place, it is then that the deficits of macrosystematic priorities, such as the underfunding of education or the usual consideration of profit by employers, may be revealed (Bronfenbrenner, 1977).

The Community Vocational Training Program is successful because it aspires to the best of family and school intervention and has also been able to develop some close relationships with businesses. The work experience often results in long-term, permanent positions, usually with large corporations that offer benefits and career ladder opportunities. For example, current interns in the work experience program at the Marriott Corporation will encounter previous graduates who are now working in the company and have embarked on a successful career. Such within-program role modeling has beneficial motivational effects for the individual and also points out a powerful longitudinal service model that should lend itself well to the successful transition of youths with mild handicaps.

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The Career Ladder Program: Implementing Re-ED Principles in Vocational Settings

Shepherd Siegel

ABSTRACT

Youths in transition and in programs which address special needs such as mild handicaps and emotional disturbance are often the defining members of a discordant ecosystem. Employment and employer behavior play a crucial role in any successful transition from school to independent adult life. The Career Ladder Program utilizes principles from Re-ED such as team building, affective education, ecosystematic intervention, and long-range enablement planning to address the issues faced by these young people and to facilitate successful transitions. This article outlines some of the relevant principles, dynamics of the transition experience, and examples of how the principles are actually applied.

Troubled and troubling youth can be defined as those young people whose relationship with their ecosystem is in discord. Hobbs (1982) states, "From an ecological perspective, emotional disturbance is not something in the person. Instead, a child or adolescent is considered emotionally disturbed when some consequential member of the ecosystem can no longer tolerate the discord in the system" (pp. 182-183). In this context, human ecosystem means all of the actors in the systems surrounding a youth (Bronfenbrenner, 1977) who is the defining member. Family, peers, teachers, social service professionals, and employers are all examples of actors who can have a consequential effect on the youth. Though almost all people experience emotional disturbance at some point in their lives, youths in special education programs for the emotionally disturbed and learning disabled, Title I programs, courts-related schools, and other programs for students with special needs (Hasazi & Cobb, 1988) will spend more time as the defining member of a discordant human ecosystem.

Re-ED (Reeducation of Emotionally Disturbed Youth) is a set of principles for working with troubled and troubling youths, based on the above definition of emotional disturbance. Interventions are directed at reducing discord in the ecosystem rather than treating disturbance in the individual. Though Re-ED is a resource whose practitioners have differing interpretations (Hobbs, 1982), there is growing evidence in the literature to support ecological practice (Amerikaner & Omizo, 1984, Apter, 1982; D'Alonzo & Owen, 1985; Goldstein & Richmond, 1979; Kroth & Otteni, 1983; Putnam, 1987; Schmid, 1987; Siegel, Greener, Prieur, Robert, & Gaylord-Ross, in press; Wehman, 1984, Zigler, 1972).

A troubled and troubling youth may pass through a number of residential, institutional, educational, home, and social environments. Many of the services associated with these environments, including Re-ED, are designed with an independent and satisfactory life for the youth in mind, enabled in part through a process of deinstitutionalization. In contemporary American society, that deinstitutionalization is most complete, or at least most acceptable, when a citizen is economically, socially, and mentally independent.

Economic independence, in almost all cases, is associated with gainful employment, a

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policy goal formally articulated by Will (1984) and elaborated upon by Halpern (1985). Statistics show that troubled youths are in fact underemployed and lacking in economic independence (Greenberg, 1978; Hasazi, Gordon, & Roe, 1985; Lewis, 1988; Mithaug, Horiuchi, & Fanning, 1985). There is evidence to support social and mental health benefits associated with the employment experience as well. Thus the need for improvement of services at the transition phase is clear. Though originally developed for children from ages 6 to 12 in residential schools (Hobbs, 1964), many of the Re-ED principles reviewed by Hobbs (1982) hold true for other populations, and for the vocational settings to be described in this article. Logically, one of the "final frontiers" and areas for the active use of the Re-ED approach is vocational development and the workplace. The likelihood of vocational adjustment for troubled and troubling youth may increase when Re-ED principles are integrated with services provided during the period of transition from school to work.

When discussing youth in transition from school to work, the frontline staff person involved in this situation may be from a school, a residential placement, Vocational Rehabilitation, an agency, a demonstration grant project, or a youth's personal contact. The author will refer to such a person as a liaison-counselor, job developer, job counselor, transition specialist, or job trainer, depending upon the emphasis of the activity under discussion.

This article will identify the key players in that transition stage, and then describe one vocational training program that has begun to apply the Re-ED approach. Some of the principles defined above will be illustrated by situations taken from that program, and a discussion will summarize the case for further development of a Re-ED influence on the vocational training of troubled and troubling youths.

THE EMPLOYER AS A KEY PLAYER IN THE TRANSITION STAGE

Public opinion and public policy value employment as the entitlement of citizenship (Phelps & Frasier, 1988; Siegel, 1986), and the policies of special education programing (IEPs, ITPs, Enablement Plans) require vocational goals for every handicapped student including those identified as emotionally disturbed, learning handicapped, or behaviorally disordered. In the special education literature, the Transition Stage can begin anywhere from preteenage years to age 22 (Gaylord-Ross, Siegel, Park, & Wilson, 1988; Halpern, 1985; Will, 1984) depending upon the severity and type of handicap, and upon the breadth of services available. The ecosystem of a youth involved in such a transition from school to work may include family members, school personnel, and rehabilitation or other professional service providers. But the transition from school to work, when it ultimately comes, will always include the employer as a key player in the dynamics of the youth's vocational outcome. While it is clear that all relevant players in the ecosystem must agree upon and actively support the vocational goals set by the youth, awareness of the employer's near-absolute control over the employment status of a youth is fundamental to the heuristics of how a successful vocational program must function.

For example, in a high turnover job, or a labor market with a high demand and low supply of labor, the manager is more likely to welcome the added resources and support that a professional in a liaison role might provide. In this situation, the liaison-counselor demonstrates that there is at least one other responsible adult who is invested in job success for the youth (i.e., job retention and/or longer-than-average tenure at the job). The manager is more likely to accommodate a handicap if there is tangible and cooperative support coming from another source. The services offered may help the manager partially solve a turnover problem. The transition specialist is conceived of as the accommodating instrument that enables the employer to survive economic hardship by hiring someone the company might not otherwise consider.

In a labor market with a low demand and high supply of labor, the job retention of troubled and troubling youths is likely to be more difficult, as replacement labor is readily available. The job developer or liaison-counselor may have to rely more upon incentives, altruism, or problem ownership by the employer.

For example, the U.S. Office of Special Education and Rehabilitation Services has participated in the development of new policies intended to remove disincentives that prevent handicapped individuals from going to work (Conley, Noble, & Elder, 1986), and

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has offered tax credits to encourage employers to hire such individuals. The Job Training and Partnership Act created the regionally-based Private Industry Councils, many of which offer wage stipends to employers who hire and train people from disadvantaged groups including troubled youths (if they qualify as low-income or as Vocational Rehabilitation "family of one" clients). In California, Project WorkAbility (Zittel, 1985) also offers stipends to pay handicapped students who participate in private sector work experiences. Programs like these can often convince a potential employer that the risk of hiring a youth with special needs may actually be a worthwhile and profitable one, if it can be successful. Incentives become especially appealing if the job developer can handle the paperwork and help manage the rehabilitation case of the newly employed youth.

Frequently, an employer will have a sense of altruism that the job developer can appeal to and serve. Many individuals in our society feel unfulfilled by jobs that are nonetheless perceived as necessary in their lives. Such people often welcome an opportunity to accomplish a socially worthwhile deed without having to sacrifice their job. Knowing that they are offering an employment opportunity to someone who might not otherwise be employed is a source of great satisfaction, if the job placement is successful.

Of course, both of the approaches described above are only a small part of building a successful transition. They are two ways of developing jobs, but they will fail to make any meaningful change unless they are succeeded by a quality service that truly enables a troubled youth to become a reliable, productive, and reasonably satisfied employee. Incentives and appeals to altruism are only forms of inducements. They are ways of encouraging the employer to join the team that is working for the success of the youth. Once that partnership is established, the team must continue to work together for the first 2 to perhaps 12 months of employment if that first step is going to lead to a successful job placement.

Like any other player in the ecosystem, the employer has needs and desires, and they are usually well-defined. But if the youth defines an ecosystem that is already working reasonably well, if all the other players are supportive of the job and work, and if it is a good job match, the employer is more likely to make accommodations and to collaborate with the special services which are provided. In other words, the employer will begin to join the team and own the problem — the vocational adjustment of a troubled and troubling youth. The next section describes a vocational program that is one possible model for ecosystematic service delivery to youths with mild handicaps who are in transition.

THE CAREER LADDER PROGRAM

The Career Ladder Program (CLP) is a demonstration project of the Office of Special Education Programs, Office of Special Education and Rehabilitative Services, U.S. Department of Education. It is a collaboration between the San Francisco Unified School District, San Francisco State University, the California Department of Rehabilitation, and several local employers. High school seniors with mild handicaps are recruited from all of San Francisco's public high schools each semester. A half-day work experience is provided for them at a real work setting, but one that is accommodated by the presence of an instructor. It is based on the community classroom model developed by Gaylord-Ross, Forte, and Gaylord-Ross (1986). Students in the program, who are referred to as interns, receive school credit and a minimum wage stipend for participating in the supervised work experience which offers teaching and learning experiences in a vocational environment.

The CLP interns "go to work" for 3 hours 4 days a week at one of the sites (California State Automobile Association, Marriott Food Service, Photo and Sound, Inc.). In the beginning of the semester, they receive intensive supervision from the onsite instructors. As they demonstrate competence and independence, the instruction is gradually faded. By the end of the semester, supervision has shifted from the CLP staff to the natural supervision of the worksite. Interns are assessed in vocational and social skills, and must meet social and vocational objectives in order to complete the program.

By using direct feedback from the instructor, and passing along co-worker evaluation, the interns are able to own, understand, and articulate what their objectives are. For example, when interns must process paperwork in order to get on the payroll, they are asked what will happen if they do not turn it in (I don't get paid.). When interns have an attendance problem, they are asked, not told, what the consequences are, and they are all able to articulate the difference between work and school behavior when they are absent (School: You get marked absent. Work: You get fired.) If, for example, a manager has stated unwillingness to hire a particular intern because he or she does not work fast enough, the intern is given the feedback, and then given an opportunity to explain the reality of the situation (I won't get hired if I don't work faster.) In each of the above examples, teaching accompanies the objective. In the case of the paperwork, problem ownership is the learning objective; in the second example, a clear policy on attendance is a non-negotiable fact that an intern accepts when entering the program; in the third, the intern may receive an accommodation, supported work-type services, or a behavioral invention such as self-timing to help overcome a problem with work speed.

One day a week interns attend an Employment Skills Workshop where entry-level job skills (10-key calculator, cash register, filing, answering telephones, etc.), peer counseling techniques (making observations, welcoming a stranger, active listening, making "I" statements, etc.), job-keeping skills (attendance, dealing with authority, good work attitudes, sticking to schedules, taking pride in work, being honest, etc.), social skills (accepting and giving negative feedback, ordering job duties, following instructions, etc.), and job search skills (resumes, mock interviews, applications, developing job leads, etc.) are taught.

If an intern successfully completes the community classroom phase of the program, the CLP staff makes a lifelong commitment to the career development of that individual. Some time is devoted to each of the 92 individuals who have graduated CLP since its pilot began in 1985. Though service delivery fades, a case is never closed. When problems arise in the various job placements, or former interns wish to attend college or change jobs, a Transition Specialist is made available. Frequently, such changes or problems in the lives of the graduates occur well after the first 90 days on a job, which would otherwise close the case. The Transition Specialist maintains quarterly contact with CLP graduates, and works in collaboration with the Department of Rehabilitation case manager. The Transition Specialist helps with on-the-job training, job search, connecting the former intern to appropriate services, counseling, and social skills training. This service continues the Re-ED approach by enlisting the aid of key players, and self-terminating when success becomes likely. The development of the Transition Specialist role also reflects a desire of the CLP staff to restructure and overcome the compartmentalization of social services. By introducing the person and the services while interns are still enrolled in school, a true continuity of service, as opposed to a *passing off* mode of operation, is being attempted.

With a population that research shows to be employed or enrolled in postsecondary school 60 to 65% of the time (Edgar, 1987; Hasazi, Gordon, & Roe, 1985; Zigmond & Thornton, 1985), CLP graduates hover somewhere around a 90% employment and school enrollment rate (Siegel, Greener, Prieur, Robert, & Gaylord-Ross, in press).

RE-ED PRINCIPLES AND THE CAREER LADDER PROGRAM

The staff of the Career Ladder Program has been involved in creating successful transitions for youths with mild handicaps for over 3 years, and has consistently found that the application of Re-ED principles serves to improve the quality of the service delivered, the outcomes for the interns served, and the ability of the staff to sustain services under the duress that is a given in this field. This section will outline some of these principles, and how they have been applied to the special circumstances of vocational development for students with mild handicaps, many of whom could be diagnosed as behaviorally disordered or emotionally disturbed.

Team Building and Affective Education

Team building means getting all of the key players in an ecosystem to agree upon what the goals are for the defining member, and to accept responsibility for their share of the support which will enable those goals to be met. In a vocational context, the goals around which a team will rally could be anything from attendance, rate of job performance, grooming, social behavior, or job retention to postsecondary training, job search, application for services, or college enrollment. The key players might include family, spouses, service delivery professionals, employers, co-workers, or friends.

Before students are accepted into the Career Ladder Program, or within the first few weeks after it has begun, a meeting attended by the new intern and one significant other person is required. This gives the staff an opportunity to meet someone who is critically involved in the support for a transition to work. Essentially, the mere fact of the meeting, and the absolute requirement of attendance, are an important first step to building the team among the family, the intern, and the program staff. It compels a tangible demonstration that vocational outcomes have a priority in the home and that is exactly what is emphasized at the meeting. After a description of how the program works, meetings generally conclude with a verbal agreement that employment or college enrollment or both are goals which all involved parties support. At minimum, continuation of the relationship with the family comprises frequent calls home. Staff is encouraged to make enough calls so that at least 70% of all calls home are to relay news of success and positive experiences for the intern on the job. In the event of family issues that interfere with job success, in-person meetings are arranged, and family support, sometimes through making contracts, is enlisted. Finally, in a situation beyond the skills of the frontline staff person, either program leaders or other agencies are contacted and will work with the family.

The importance of the team and its inclusion of the employer has been addressed above. Naturally, employer-related situations occur after graduation and the community classroom experience. The intern joins the competitive work world where a new employer enters the ecosystem. But a similar relationship is fashioned during the internship as well.

In the recruitment stage, the sponsoring company interviews and selects from a group of about twice as many candidates as there are openings. This invites ownership by the company from the first day. Programs that simply place a student on a work experience site fail to give the employer an opportunity to own the choice of who will be placed with their company, and deprive the student who is placed there of a chance to be selected by interview and competition just like the people with whom that student will be working. Students eliminated by interview are given the opportunity to interview at another site, reapply the following semester, or participate in other vocational programs.

When interns are assigned to departments at the jobsite, the likelihood of a positive relationship with the co-worker is always weighed. Co-workers are asked to evaluate student behavior by using the actual company forms for employee performance appraisals. They are solicited for advice on how to remediate problems on the job. Whenever possible, friendships between interns and co-workers are encouraged. For example, interns are asked to eat their lunches in the companies' cafeterias instead of at school before work. Within the group, the team is built through a variety of affective exercises and cooperative learning at every opportunity. The social skills training program, which is behaviorally based and involves extensive role-plays (Goldstein, Sprafkin, Gershay, & Klein, 1980; Hazel, Schumaker, Sherman, & Sheldon-Wildgen, 1981; Siegel, 1985), is preceded by several weeks of team-building through peer-counseling exercises (Varenhorst, 1980) and other affective education curriculum developed by Ron Morrisette at the University of California, Berkeley.

Affective education recognizes that feelings are deeply interior, yet do not exist without interaction from others outside. Affective curriculum includes tasks or activities that use role-play, simulation games, and modeling to generate a flow of primary (feelings, emotions, fantasies, dreams, imagination) and secondary (reason, logic, intellect, and thought) process data from a group or team, the results of which are totally within their control.

For example, entering a brand new work environment can be a difficult experience, so students re-experience the feeling of being a stranger through an exercise in the weekly seminar. In this exercise one member of a small group is chosen, must leave the room, and then re-enters as a stranger who the group is challenged to make feel welcome. Discussions which follow the exercise give interns a chance to explore the experience, and the goal of the activity is to gain power and begin to master a potentially disturbing experience.

Active listening, and the ability to make observations can increase social acceptance on the job. Students learn to ask appropriate open, feelings-oriented questions in social situations and to discern them from closed, information-type questions. They learn to make observations that describe behaviors without making judgments. They subsequently build problem-solving skills by integrating such descriptions into "I" statements which articulate feelings, conditions when those feelings arise, and reasons for working together to solve the resultant problems. Many of our interns come from troubled situations where vocational goals are not supported, so by learning how to make "I" statements, they acquire a tool for problem solving at home (I feel abused when I am asked to take Mom to the doctor during my work hours because I want to make a good impression at the job, and they're not going to like it if I don't come in.) or at work (I feel hurt, discriminated against, and put down when people here just call me 'the black girl' because I want to be called by my name, and treated with respect just like everyone else. I don't like being called by my race.)

Deciding to go to work, or to develop a career plan, or even to seek employment is a major life decision, so values-clarification exercises help students to go through the process of valuing. Values are ranked, shared, and not judged. Also, the information gathered during this exercise is later used to help write resumes and to develop ideas for discussing interests during job interviews.

Finally, almost all of the CLP content addresses the learning of work behaviors, and not affective development. While the program is based on the centrality of vocational success, life contains many other important and deep activities. Thus, the interns have about one hour per week in the program when jobs and career development are *not* the main concerns. This feature actually multiplies the effectiveness of the program, by allowing interns freedom for affective growth without having to go outside the program to get it.

This is how affective education is integrated into team building and is directly related to vocational adjustment. A team is built among the interns, they begin to enter each other's ecosystems, and peer support for mutual success emerges. Also, it gives more opportunity for the staff to enter into adult relationships with the interns, to transcend the "teacher" role, and to assume the more proper role of a peer who is really a personal agent for the career development of the intern.

In summary, the team is first established between the family, the intern, and the program staff. Secondly, it is extended to include the host employer. Next, the interns are given opportunities to build a team among themselves, and finally to create a new adult relationship with the frontline staff of the program. Through team building, interns and staff can work together for mental, economic, and social well-being. These goals are allowed to co-mingle and be identified with one another. While programs for younger children can build and maintain mental health and peer culture, a vocationally-based program addresses economic issues as well, and is therefore the most appropriate place to integrate affective education and to develop teams.

Ecosystematic Invention

The community classroom itself is a planned ecosystem. The co-workers and manager are aware that they will be hosting students with special needs in a work experience. All know that some supervision by a school-based instructor will be provided. But the setting is a real workplace, with all the real needs and demands of any business. Thus the seeming contradiction, *community classroom*, actually is designed to allow an educational approach to function within the context of a real work setting. Many of the potential problems that a troubled youth might find in the areas of social skills, attendance, job skills, and other job-keeping skills can and do surface, but an instructor with some ability to rally the team, reduce the discord, and change the behavior, is on the scene. In this sense, the entire model is a workplace-oriented ecosystem.

The need for someone in a liaison role frequently becomes obvious within the first few hours of placing a young person with special needs on a jobsite. In this situation, a professional is more effective and appropriate than a family member, but the professional may be relying upon the family or school to support learning related to training, grooming, punctuality, priority of work, and so forth. With an at-risk youth, there is a clear need for someone in the liaison role to counsel and to coordinate the necessary support and accommodations. Some anecdotes which will illustrate follow.

One intern, Victor, was performing very well at the CLP insurance company site. He was offered a full-time permanent position with the company. However, his father objected. He insisted that Victor attend college. The CLP staff believed that this job opportunity was superior to Victor's options as a full-time student, and encouraged him to take the job and attend night classes to improve his English. (English is Victor's second language after Vietnamese, and he has some speech impediment.) This might enable him to have work, pay, and education. However, the father's word could not be questioned in Victor's family. Staff went to the home and met with the family. After explaining the CLP assessment of Victor's opportunities, and ways in which he could work and still get a college education, the father enthusiastically endorsed the plan. Two years later, Victor has achieved his first promotion at the job, and continues to attend night classes to improve his English and his speech articulation.

Another intern, Ruby, was at the same office. She had a chronic attendance problem, and would come late on the days she did show for work. The team transferred her to another department where they had located a co-worker who worked particularly well with more troubled interns. This new supervisor was able to form a close and supportive relationship with Ruby. Ruby's attendance and performance immediately improved, and she was in fact hired to work at the new department, due mainly to the benefactress relationship formed with her new supervisor. Critical to Ruby's success was the realization among the CLP staff that they did not at that time own the resources to solve the problem, except to locate and involve a new key player who did.

John was an intern who seemed to get along in the corporate kitchen where he was being trained, but the manager felt that he worked too slow. His instructor came in and challenged John to a highly competitive broccoli-chopping contest. After the instructor was soundly beaten a few times, he explained the reasons and pride associated with speed on this particular job, and set up goals for completing tasks by racing the clock. Co-workers were encouraged to use the same approach to help John increase his speed. Another intern, Mick, had rate and attention problems on a clerical site. He was taught self-timing techniques for improving his speed. The additional task displaced his distracted behaviors, and the method increased his rate. A co-worker was enlisted to take timings of Mick to check for reliability. In these instances, an educational invention was used on the jobsite in a way that not only was effective, but also allowed co-workers to participate. Hence the term invention (as opposed to intervention) emphasizes the Re-ED approach of enabling an existing system to function, offering accommodation but seeking to avoid dependency on outside support.

Joe was an intern who was offered a warehouse position. He had good qualifications and experience for the job, but after being out of school for a year, he wanted to attend some classes in college, and work only part time. The company is part of a high technology field, and Joe's job counselor believed that Joe might actually learn more on the job than at school. The employer was willing to arrange a part-time job, but Joe was troubled over the interview, because he hadn't yet selected his classes and he was very reluctant to take the job until he knew when they were meeting. The counselor informed the employer of this situation. Joe was asked to bring the catalog of classes in after the interview. The employer, who had spent a lot of time in college, was extremely happy to be asked to provide Joe with some academic counseling. In this way, Joe was able to see the employer as supportive of his further college education, even before the first day on the job. The two of them devised a strategy whereby Joe was able to accept the position with much of his trepidation about the job, and about entering college, alleviated.

Staff Development

The Career Ladder Program grew from a pilot program which was initiated in 1985 by the author under the supervision and guidance of an advising professor at San Francisco State University, and with the support of the Special Education Department of the San Francisco Unified School District. Together with a staff person hired by the District, the program was developed and expanded to its present staffing of six direct service providers, and two instructors in related programs. Each year there has been some turnover, and each year the original leaders in the program have revised their procedures for giving orientation to new staff member.

By presenting the overall goals of the program, relating typical problems of the past and how they were solved, modeling certain interactions likely to occur with interns, and by presenting the structural aspects which have increased successful outcomes for interns, many of the roles previously played by the leaders have been delegated to the frontline staff. Regular meetings and consultations maintain the standards of the program, and all problems are addressed in an atmosphere of respect for the interns and with a mind towards solutions. In this way, the frontline staff work of the Career Ladder Program has been invented by its founders, and then task-analyzed so that new staff with less training and experience can implement the program. This practice is consistent with Hobbs' (1964) idea of using more highly trained personnel to "guide the work of other carefully selected persons with limited training" (p. 828). Given the vocational priority of the Career Ladder Program, the policy developed thus far, and CLP's ecological guidelines, a new staff person can be making most if not all of the decisions which implement the program within the first few months after joining the team.

Resource Building and Long-Range Enablement Planning

As discussed earlier, interns have access to the services of a Transition Specialist once they have graduated from high school. This function had previously been filled by the two founders and the interns' rehabilitation case manager. However, the demonstrated success of the program has earned it support from the U.S. Department of Education and the California Department of Rehabilitation, the increasing caseload has made obvious the need for additional personnel.

The Transition Specialist becomes familiar with interns while they are in the program, and develops contacts in the community with all of the agencies and services an exiting intern may need: community and 4-year colleges, specific vocational training programs, jobs, services for single parents and pregnant teens, temporary employment agencies, and the CLP employer network developed over the years.

Beyond that, the Transition Specialist coordinates the rehabilitation casework of the exiting intern, and helps employers to take advantage of incentives. The Specialist will also go on the job with a former intern who is in need of additional services. The Specialist conducts an ongoing job club, and continues to provide social skills training to the former interns. Finally and most importantly, the specialist forms an adult relationship with the former intern, and continues to analyze the ecosystem, devising new inventions for enablement when necessary.

Again the goal is to fade services when the likelihood of a successful outcome exceeds 50%. Yet facts accumulate to build the case for the lifelong commitment which CLP sustains. A number of students do not feel ready to work until a couple of years after exiting high school, many of the interns are good workers, but will not self-advocate for advancement or conduct a wide-ranging job search when their current job becomes unsatisfying, and many of the former interns seek more education after graduating. This does not mean lifelong continuous services, but rather continuous availability of service.

For example, Victor contacted us when he became ready to seek promotion but did not know how to go about doing it. Another intern contacted us almost 2 years after graduating to ask for help with a job search. He had, by his own telling, not been serious about working until that time. Through a job lead and intensive supported services that CLP offered him, he is now very successful as a union dishwasher at a local college, and is the first person in his family to hold down a job since his mother left work about 6 years ago.

Another intern worked at a store as a shipping and receiving clerk for about 6 months following her high school graduation. She was terminated 33 days after suffering her second nervous breakdown, leaving work, and not notifying the employer. Several months later, she contacted CLP about going back to work. Now she works delivering intraoffice mail in a law office, receives only occasional on-the-job support from a Transition Specialist, and is reducing her medication. Finally, another former intern, who really wanted to separate from CLP services for the first 2 years following her graduation, finally did accept a position CLP helped her to find. She also needed counseling and on-the-job training in order to meet the demands of the job (making salads in a corporate cafeteria). Her manager assisted in the training by providing a minute-by-minute task analysis of the job so that she could monitor her time and prepare more than one menu item at once. She still has the career goal of working for a florist, so the Transition Specialist is going to help her get a driver's license, which she will need in order to be competitive in that field.

DISCUSSION

Competency is a key word in the lexicon of Re-ED. Clearly, when we talk about competency as an adult, we include economic health, the ability to sustain one's self independently. In fact, the so-called fringe benefits of employment — self-esteem, belonging to a group — can provide a basis for social and mental health as well. Experience with the Career Ladder Program has provided both visceral and databased validation of competitive employment as a valuable life experience which forms the basis of cooperative and productive relationships between troubled and troubling youths and the world around them. Vocational adjustment is not the only goal of education but it is a primary one. In contemporary society, it is also a prerequisite of citizenship. There should be little argument as to its prominence in the content of service delivery to troubled and troubling adolescents. "The therapeutic relationship . . . is at heart an ethical enterprise, with respect to both method and outcome . . . (W)e cannot responsibly remain satisfied with vague definitions of what we mean by mental health" (Hobbs, 1964, p. 830).

All studies, and specifically all studies of adult outcomes for handicapped individuals, have imbedded in them assertions of values, be they emotional adjustment, getting off welfare, independent living, or even a successful marriage (Rose, 1985; Siegel, Gaylord-Ross, Ford, Gumpel, & Park, 1987). The Career Ladder Program reflects a commitment to economic independence as being integral to mental health. Thus this vocational program makes vocational adjustment its priority. Other issues in CLP youths' lives are important and addressed, but only as they may have an effect on vocational outcomes.

This keeps the CLP staff focused. At the transitional stage, attention to mental and social health in a nonvocational context has the potential for leading CLP services astray. This particular program can very thoroughly expend its energy just maintaining satisfactory vocational outcomes. Thus, for the intern or graduate who is defining discord which precludes working, our function is to facilitate the very best possible referral to other professionals, and/or to simply be available when the youth is ready to go to work.

Consider then how the CLP staff is perceived by a youth in transition. The CLP role is clearly defined, and when a youth is in fact ready to go to work, s/he has a contact, s/he faces less than a void. Anyone who has experienced unemployment knows that the task of seeking work (which takes skills) can seem overwhelming. Presenting one's self in an interview can be terrifying for anyone. It is a test of self-confidence, which many disturbed youths lack or tend to misrepresent. The fact that many CLP former interns know at least one friendly source, clearing defined as representing vocational services which they can call upon in the first years following high school, justifies the Career Ladder Program as a useful and essential bridge to the working world.

Furthermore, the vocational orientation enables CLP staff to work effectively with the Department of Rehabilitation, which has been mandated to serve these youths. Typically, vocational rehabilitation departments have worked with injured or handicapped adults who are seeking to return to work. There is a need for effective liaisons between rehabilitation and education service providers, so that the exiting student who has never worked steadily may experience continuity. Finally, education and rehabilitation workers can share relevant contributions from their respective fields.

The Career Ladder Program takes an ethical stand for permanent, competitive employment for troubled and troubling youth, and builds a program around it. Thus there is a "guiding light" for all policy decisions, from the raising of funds to the daily interactions with CLP youths. By having a clear sense of values, and by basing services around it, the CLP staff have been able to absorb an eclectic mix of services and put them in an ordered perspective which has increased employment opportunities for an underemployed population The principles of Re-ED are part of the template from which this innovative service has evolved

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Research Breakthrough Reduces Turnover Among Entry-level Employees

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Research Breakthrough Reduces Turnover Among Entry-level Employees

An Untapped Resource

Given the changing nature of the workforce, many employers are having difficulty in attracting and retaining entry-level service and production workers. Our experience indicates that there is a cost-effective solution to this problem. Progressive managers are beginning to use it to their advantage. We have found that there is a vast, untapped resource of workers who are reliable and productive employees, virtually no different from most of those hired for entry-level positions. They have the same abilities to produce and work steadily, and in some cases to ascend the career ladders of your company. Though valuable on their own merits, they are employees who can also increase your profits through the tax incentives and subsidies offered to hire them. Yet another asset is their tendency to remain with a company once they are hired.

The type of potential employees we are speaking of are youths who are exiting high school, but who were identified by school counselors as having a mild handicap such as a learning disability, speech impairment or emotional problem. Though designated as having special needs, these labels misrepresent many such individuals whose so-called "problems" drop away when they leave an academic environment and are given the opportunities and responsibilities that come with a job. In fact, most youths from this group do not consider themselves handicapped, and will not identify themselves as such. But a sensitive approach on the part of a manager can create a "win-win" situation where the youth is not further stigmatized by a label, and your company can still gain a productive employee and take advantage of government-sponsored incentives.

Our research indicates that when a new employee's learning or behavior problem does persist beyond high school, a little extra attention by the manager or co-workers is usually all it takes to engineer a success. Just as a ramp serves to accommodate a person in a wheelchair, or a magnification device enables a visually impaired individual, so can the human environment adapt to someone whose learning style is a little bit different.

Our study was an investigation of employment success. Who were the mildly handicapped youths who were going directly from high school to work, and to a resaonable extent, succeeding? Over the last five years, our group (the Career Ladder Program) has worked continuously with young high school graduates who were served in special education programs. The research for this article, and the employers who have worked with us and our graduates include hotel and restaurant companies like the Marriott Corporation, major legal firms, the California State Automobile Association, major department stores like Target, car rental agencies like National, construction companies, and grocery chains like Safeway. In all of these companies are managers with the foresight to see the profitability of employing youths from targeted groups. In many cases these "special youths" have even outperformed their non-disabled peers on the job.

The Career Ladder Program (CLP) offers on-the-job vocational training during school, a curriculum of job-keeping skills, and post-high school followup services where we work with these youths' employers. Our success stories often include managers with just that extra ounce of intelligence, creativity, and patience which enables them to come up with solutions to everyday on-the-job problems. The additional support services, where we supplement a manager's efforts and shoulder some of the training burden—at no cost to the employer—have helped the youths in CLP to be employed at a rate far above their special education peers, and even higher than nondisabled youth [87% employment vs. 62$ (Siegel, Robert, Waxman & Gaylord-Ross, 1990; Wagner, 1989)]

An Investigation of Success

We spoke to 41 youths who had held a job for at least three months. They ranged in age from 19 to 23. All but one had graduated high school. These youths worked in all fields, from food service to office work, from manufacturing and construction to retail and warehousing. School records were located for 40 of the youths, and we found that 32 of them had been classified as Specific Learning Disabled, four as Educable Mentally Handicapped, three as having a Severe Disability of Language (Aphasia), and one as being Severely Emotionally Disturbed. On a Wide Range Achievement Test, their reading scores ranged from about third grade level to twelfth, the median score being above sixth grade level. Math scores ranged from third grade level to almost eleventh, the median score being about fifth. In other words, they were probably not too different from many of the applicants managers already face in entry-level positions.

What was their employment experience? Among our questions were six which we believe are keys to understanding success on the job for these young employees. We asked the managers of these 41 youths six questions related to on-the-job problems and their solutions. We then went to the employees, and asked them six complementary questions. All twelve questions are listed below:

Research Questions Regarding On-the-Job Performance Problems

	See List #
To the managers:	
1) What problems did they perceive these employees having on the job?	1
2) Which of these problems persisted?	1
3) What did they perceive the youths doing to remedy the problems?	3
4) What *could* they do to remedy problems?	3
5) What did they, the manager, do to remedy the problems?	5
6) What *could* they do to remedy problems, given greater resources?	5
To the employees:	
1) What problems did they experience on the job?	2
2) Which of these problems persisted?	2
3) What did they, the employee, do to remedy the problems?	4
4) What *could* they do to remedy problems?	4
5) What had the manager done to remedy the problems?	6
6) What *could* the manager do to remedy problems?	6

On-the-Job Performance Problems

When we interviewed the managers, there were three instances where no job difficulties were reported, and in an additional ten instances, no job difficulties persisted after an initial period of adjustment. List 1 shows the twelve most common problems as perceived by the managers in order of frequency. Below them are the seven which were most persistent.

List 1.

Manager-Identified Performance Problems with Employees

Employees had difficulty . . .

- Making decisions independently.
- Screening out distractions.
- Getting to work on time every day.
- Understanding the purpose of a task in the overall scheme of a business opeation?
- Resisting peer pressure.
- Paying attention to detail
- Working without supervision.
- Coming to work regularly.
- Accepting criticism.
- Remembering a work rule.
- Performing at a consistent rate.
- Getting enough experience.

Some had persistent difficulty . . .

- Making decisions independently.
- Screening out distractions.
- Resisting peer pressure.
- Paying attention to detail.
- Accepting criticism.
- Remembering a work rule.
- Performing at a consistent rate.

When we interviewed the employees, we found them to be an extremely diverse group, and that no one performance problem predominated. We believe that this is a critical finding. Approaches to solutions require some managerial ingenuity and sensitivity to individual qualities. Still, some commonalities emerged. The list below shows the nine most common problems on the job (in order of frequency) which these young people reported to us. Below them are the three most persistent problems which took some special effort to accommodate.

List 2.

Employee-Identified Performance Problems

Employees had difficulty . . .
- Performing at a consistent rate.*
- Paying attention to a task for over 45 minutes.
- Performing unpleasant tasks.
- Understanding written instructions.
- Accepting criticism.
- Handling pressure.
- Making decisions independently.*
- Working without supervision.*
- Working with enough coordination and dexterity.

Some had persistent difficulty . . .

- Paying attention to a task for over 45 minutes.
- Understanding written instructions.
- Accepting criticism.

*appears on both List 1and List 2.

Three problems appear on both lists. They are: "making decisions independently," working without supervision," and "performing at a consistent rate." So these are the problems on which there is something of a consensus between the manager and the employee. Clearly, the manager can benefit from the youths' perceptions, and some values conflicts can be inferred from the data. For example, punctuality and attendance are more prominent concerns of the manager, which the youths' need to recognize, and issues of pressure, literacy, and coordination are of more concern to these workers than their supervisors may realize.

Solutions and Strategies: Employees Can Solve On-the-Job Performance Problems

So what is to be done to solve these problems, to make these young people productive, reliable, long-term employees? Let's look first at what the youths themselves can do to improve their performance and job maintenance skills. What did the managers observe in the employees' behaviors, and what would they like to see their employees do to solve their own problems? We wanted to see whether employees' actions were being recognized, acknowledged, and appreciated. List 3 shows the managers' perceptions of what self-help strategies were utilized. Below them are the efforts they would like to see the employees use:

List 3.

Manager-Identified Self-help Strategies Used by Their Employees

Employees have tried . . .
- Asking for help when needed.
- Coming to work on time more.
- Learning new skills on the job.
- Working faster.
- Making decisions independently.
- Coming to work more often.
- Accepting criticism.
- Staying on task with less supervision.

Managers would like to see more of their employees . . .

- Asking for help when needed.
- Coming to work on time more.
- Working faster.
- Coming to work more often.
- Accepting criticism.
- Staying on task with less supervision.

List 4 enumerates the eight most common employee-generated job accommodations/behaviors which solved an on-the-job performance problem. Below that are the three things employees told us they could do, but hadn't yet tried.

List 4.

Employee-Identified Self-help Strategies

Employees have solved performance problems by . . .

- Asking for help when it's needed.*
- Learning new skills on the job.*
- Staying on task longer.
- Accepting criticism.*
- Staying on task with less supervision.*
- Coming to work on time more.
- Making decisions independently.*
- Taking classes to improve math skills.

Employees believe that they could improve performance by . . .

- Learning new skills on the job.
- Accepting criticism.
- Taking classes to improve math skills.

*appears on both List 3 and List 4.

Those behaviors which appear on both lists tell us that managers and employees would like this group to have skills which make them more independent on the job, while at the same time knowing when to seek assistance. The social grace of accepting criticism and the need for more training in job-related skills are also identified as common goals and solutions.

Solutions: Problem Ownership, Team Building, and Social Skills Training

Certainly, some of these "solutions" appear to be merely opposite statements of the problem, but we believe that identification of the problem, and a nonjudgmental communication of it to the employee can go a long way towards a real solution. We call this "problem ownership," and it is the first critical step in solving human resource problems. In other words, if the employee can articulate that there is a problem, and that they play a part in it, then they are likely to solve it themselves. In other instances, the solutions on the list indicate a goal that can be jointly set by the manager and the employee, and a program can be developed which will empower the employee to eventually take control of the situation.

A good example would be "accepting criticism." In some cases, the problem needs only to be clearly defined, the employee needs to be made aware that this is something that needs work, and then proceeds to do the rest. Another employee who defines a similar problem may benefit from roleplaying exercises—social skills training—which offers actual rehearsals in learning the skill of accepting criticism. Understanding social problems as residing between people can lead to team approaches where problem ownership is shared and a team solution is developed. Young entry-level employees—especially those who have experienced low school achievement—are at greater risk of attracting nominations as "problems" that are actually characteristic of a larger work culture discord.

Attendance is another serious problem which can frequently be solved with a solid counseling approach, and in other cases, a systematic intervention can, with a little effort, train the attendance skill and avert an otherwise costly termination.

One of our interns, Larry, was chronically late for a food service job that started at 7:30. Though otherwise dependable, his "handicap" was the inability to summon forth the rationale which propels most of us from slumber to preparation for the work day. We provided accommodation by calling Larry at 6:00 AM each day to remind him. Though scarcely any employer would even consider extending this service to an employee, we at the Career Ladder Program sufficiently annoyed Larry and his family that the problem was solved in less than two weeks. Our function was to take responsibility only in terms of conveying to Larry his ownership of the punctuality problem. We didn't own the problem, but we did take responsibility for an effective communication of it.

Larry would have been terminated. Instead, he has worked continuously for the almost two years since this event. And this is but one of the many techniques we have used to sustain job retention for this otherwise underemployed group (CLP graduates at about 87% and other mildly handicapped at uner 60% in most employment studies).

Solutions and Strategies: Managers Can Solve On-the-Job Performance Problems

We looked at those things managers have done, or could do, to solve any of these on-the-job performance problems. How did the managers perceive their own actions? List 5 describes, in order of frequency, the eleven most common job accommodations used by managers. We then asked them what they would do if they had more resources—money, personnel, or time—and the five most common responses appear below.

List 5.

What Managers Do to Solve Performance Problems

Managers have tried . . .

- Offering more training on job duties.
- Clearly communicating your expectations.
- Providing more supervision.
- Counseling your employees.
- Making criticism very specific.
- Repeating instructions.
- Providing more access to promotion, benefits, etc.
- Checking the work.
- Modeling instructions.
- Restructuring the job.
- Giving verbal instructions.

With greater resources, managers would like to be . . .

- Offering more training on job duties.
- Providing more supervision.
- Counseling your employees.
- Providing more access to promotion, benefits, etc.
- Checking the work.

Finally, we asked the employees what they perceived their managers to have done to accommodate performance problems. We wanted to see whether managers' actions were being recognized, acknowledged, and appreciated. List 6 offers the 11 most frequently cited accommodations. Below them are the three most commonly requested manager actions, what the employees would like managers to do.

List 6 .

What Employees See Managers Do to Solve Performance Problems

Managers have been acknowledged for . . .

- Repeating instructions.*
- Offering more training on job duties.*
- Modeling instructions.*
- Checking the work.*
- Clearly communicating their expectations.*
- Making criticism very specific.*
- Giving verbal instructions.*
- Giving written instructions.
- Giving instructions more slowly.
- Providing more access to promotion, benefits, etc.*
- Providing more supervision.*

And their employees would like to see them . . .

- Offering more training on job duties.
- Making criticism very specific.
- Providing more access to promotion, benefits, etc.

*Appears on both List 5 and List 6.

Perhaps the most exciting comparison of responses is between Lists 5 and 6. Here we find an extremely high level of concurrence. All but two of the manager-generated accommodations appear on both lists. In our work with youths, we occasionally encounter a young man or woman who wants to be left alone on the job, and is resistant to supervision. **But the overwhelming majority of youths report that they want to be more closely supervised, they want their work checked, and they want more training.** The overwhelming majority of managers we interviewed would like to provide that. They are acutely aware of the need to offer their young employees the benefit of their greater experience and knowledge.

But just as many of them must admit that they do not have the time, and are forced into the costly process of cycling through entry-level workers until they find those who learn quickly and efficiently, and work well without supervision. But then again, only a small percentage of that group stays on the job for a significant period of time.

Solutions: Communication, Training and Supervision

All of the most important accommodations, except that of promotion and benefits, are in the realm of training and communication. In the eyes of the employee, on-the-job problems have been solved by the manager taking some extra time or effort to explain a task more carefully, slowly, or through the medium which the employee understands best (i.e., for some it may be written instructions, for others, verbal). Simple observations of the employees' behaviors usually give major clues as to how performance can be enhanced. So often, time is the one thing managers claim they do not have to give. But the youths in this study, whose salaries can be half-subsidized initially by the government through an On-the-Job Training contract, benefit greatly, and ultimately save companies thousands of dollars when that extra training time is offered. For these youths, that extra time spent by the supervisor to observe how they learn and function is exactly the training accommodation which the government subsidy is funding. And that attention has been enhanced by support from programs like the Career Ladder Program. As a magnification device enlarges the image for a visually impaired person, so can repetition enlarge the "learning image" for someone with a learning disability.

So many of these accommodations are easy and obvious. A shift in the perspective of the manager can create a real "win-win" situation. All employees, all people, have special needs. With an identified special needs youth, who may have some professional support, the difference is in knowing. You will know what the special characteristics of the employee are before day one. With a walk-in interviewee, you'll have to find out over time. Isn't it wiser and more profitable to anticipate and prevent problems than to have to react to them?

The superior solution to the problem of entry-level hires is to find the candidate for whom the entry-level position is a surmountable challenge. Then, engineer a plan which will insure the worker's success. We offer the following suggestions:

Checklist for Success

Before the first day of work:

√ Contact a local agency or school district who may be able to provide you with eligible candidates.

√ Get personal references.

√ Screen, select, and hire. Consider offering job-related tasks in place of an interview. Some of these candidates are great workers, but do not interview well.

√ Apply for a Targeted Jobs Tax Credit.

√ Or, negotiate an OJT (On the Job Training) for the candidate with your local Private Industry Council.

√ Plan for time to observe the worker learning the job skills.

√ Pretrain the supervising manager, and support or provide any necessary accommocations well ahead of time.

During the first few weeks:

√ Find out how the worker learns best, and use those approaches.

√ Try the suggestions made in Lists 3 to 6.

√ Use support that may be available from the referring agency or school.

√ Assign a co-worker to be a mentor, benefactor, or big brother/sister. Ask this person to help the new employee to "learn the ropes", and offer this co-worker acknowledgement and the opportunity to suggest accommodations.

After the adjustment period:

√ Make periodic checks to insure that the quality of work is consistent.

√ Develop a strategy with co-workers to provide any extra assistance needed by the worker.

√ Let the worker tell you what she or he needs. Offer a structured opportunity at regular intervals.

√ If there is a problem, make sure that the worker understands in objective terms what it is, and can articulate themselves, that is, tell you what the problem is.

√ Use support that may be available from the referring agency or school.

√ Evaluate any terminations you have to make, so that an earlier preventative intervention can be available in any future situations.

As a final thought, we must emphasize the generic value of this information for all entry-level employees. The differences between so-called mildly handicapped youth and other entry-level applicants are nominal at best. We contend that many will be able to ascend the career ladder, given reasonable opportunities. Often, their only handicap has been low achievement in a school environment.

The heart of our success lies in our ability to make the kinds of observations and adjustments at the workplace which are discussed in this article. As the data shows, the line between profitably retaining these youths in jobs—indeed, retaining any employee experiencing these kinds of problems—and having to deal with the costs and aggravations of high turnover, is often defined by the ability to communicate expectations clearly, work with more diverse learning styles effectively, and make minor accommodations on the job. It's an investment opportunity you can't afford to pass up.

A Follow-up Study of Participants in a Longitudinal Transition Program for Youths with Mild Handicaps[1]

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Running Head: FOLLOW-UP STUDY OF YOUTHS WITH MILD HANDICAPS

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Abstract

Follow-up data was reported from a transition program for youths with mild handicaps. The program had an intensive postsecondary component for the 94 former students who had exited over a four year period. A number of quantitative measures indicated a substantial rate of employment, positive reports of job changes, participation in continuing eduation, and some access to benefit packages. The employment and educational indicators showed that the program graduates had superior outcomes to a national sample (Wagner, 1989). Still, participants had stabilized at an entry level of work participation. Their advances in postsecondary education were nominal. Results were interpreted with respect to program efficacy, deskilling of the workforce, and the need for further training and assistance. Finally, the case for the cultivation of long-term relationships between service providers and youths with mild handicaps received some support.

A Follow-up Study of Participants in a Longitudinal Transition Program for Youths with Mild Handicaps

Follow-up studies have reported low levels of employment for youths exiting special education. Public Law 94-142 has been in effect for over 10 years and the first cohorts of youths who have received special education services for much of their school career are now exiting the public schools. There is a call to evaluate the long-term effectiveness of these services (Benz & Halpern, 1986; Benz & Halpern, 1987; Cobb & Hasazi, 1987; deBettencourt, Zigmond & Thornton, 1989; Lewis, Bruininks, Thurlow & McGrew, 1988; Retish, 1989; Rusch, McNair, & DeStefano, 1988; Wehman & Barcus, 1985; Zigmond & Thornton, 1985). This article addresses that issue for youths with mild handicaps, and evaluates the effectiveness of a particular school-to-work transition program, the Career Ladder Program (CLP).

Most follow-up studies have conducted static probes where a youth is contacted and interviewed once. Earnings, job title, and benefits are calculated, as are services received in school. Without exception, youths from virtually all disability groups are employed at a rate lower than the general population. Two of the the most prominent studies in recent years reported employment rates of 61% (Edgar, 1987) and 61.5% (Hasazi, Gordon, & Roe, 1985) for youths with mild disabilities. Mithaug, Horiuchi, and Fanning (1985) reported a 69% employment rate overall for graduates of special education.

Yet studies which take factors such as vocational education, postsecondary school enrollment, parent involvement, method of job search, mainstream or dropout status, and assign them equivalent value across individuals offer only limited explanations of these employment rates. We have learned that having part-time jobs during school tends to increase employability (Hasazi et al., 1985), as does secondary school completion (Zigmond & Thornton, 1985) But prolonged contact with the youths and families participating in CLP showed us that such factors fell short of adequately describing the experience of leaving school and attempting an independent adult life. We gathered case histories (Robert & Siegel, 1989; Siegel, 1988a, 1988b) where quantification failed to approximate what the youth was experiencing. We learned that variables such as mental state, family situations, level and style of intervention, employer behaviors, corporate takeovers, gang warfare, access to tutoring services, program guidelines, and under-the-table employment arrangements all affected postsecondary outcomes, but were difficult to report systematically. Furthermore, we found that the employment histories of some of our graduates were extremely complex, where, for example, various part-time jobs would overlap, sales commissions would vary, and workshift schedules would be highly irregular.

One study which became a model for us (Kernan & Koegel, 1984) tracked a group (N=48) of individuals with mild mental retardation over a two-and-a-half year period. The study combined ethnographic methodologies with an effort to report the employment experience with some precision and quantification of variables. They reported that the employment rate doubled, from 23% to 46%, over that period, signifying the importance of collecting longitudinal data.

As practitioners, not researchers, we came to view data collection as a byproduct of service. It was simply a part of our need to be accountable, and to evaluate our program, which includes the continuous availability of services. Underlying the mission of CLP is the belief that all citizens should have access to career development, where they can grow and be challenged in their jobs. Even those who have developmental disabilities or who find satisfaction in a job which does not change should be able to earn more money and accrue benefits and job security as they continue to offer an employer consistent and dependable performance. Three components come together to complete that mission: a semester-long supervised work experience in a real work setting during the senior year of high school, which we call a community classroom; a concurrent weekly Employment Skills Workshop curriculum; and continuously available postsecondary services provided by our Transition Specialists, in collaboration with the California Department of Rehabilitation (Siegel, 1988a; Siegel, Robert, Greener, & Gaylord-Ross, 1990).

Over 92% of our graduates are either engaged in work, in postsecondary education or training, or some combination of the two.

Having achieved this success rate, we had to ask a more difficult question. Were we empowering these youths to actually climb a career ladder, or were we only succeeding in tracking them into a lower strata of society where they were employed at a subsistence level? This study is a first attempt to answer that question.

Method

Sample

All participants have graduated from CLP or its pilot, the Community Vocational Training Program (Siegel, Greener, Prieur, Robert, & Gaylord-Ross, 1989). All were served in San Francisco public school programs for Learning Handicapped Students (Californial Education Code). They were either in Resource Specialist Programs or Special Day Classes for the Specific Learning Disabled or Emotionally Disturbed. In Table 1, the numbers of participants graduating CLP each semester are listed. Rather than group graduates according to date of exit, data was entered according to the number of months since completion of the community classroom training. In this way, any patterns indicating a developmental phase or "floundering period", for example, would be more easily identified. Thus, our evaluation sample for youths who have at least six months since completing the community classroom training is 94. Data for youths at 12 months beyond the community classroom includes 82 persons, at 18 months, 66, and so on. Table 1 also shows the date of exit and cumulative sample for all CLP graduates.

Insert Table 1 about here

Data Collection

A simple protocol was developed on which was recorded pertinent information describing each of the variables. Data was collected for each graduate for six-month periods since they completed the CLP training, beginning with a retrospective procedure initiated in December of 1988. Graduates who were actively receiving services were interviewed in the course of staff contact. Those who were more peripheral from our service reach were contacted and interviewed by telephone or in person. The interviews averaged about twenty minutes in length. Some participants demonstrated very precise knowledge about dates and wages, while informal dialogue helped interviewers deduce information in other cases. We investigated eight basic features of postsecondary life which could be quantified, and which we propose as reasonable indicators of postsecondary success. They are:

1) Percent time employed. Forty hours per week is considered 100%. We took the actual number of hours and weeks employed, and divided it into 26 40-hour weeks for each six-month period. This is an accurate indicator of time spent working, but it does not immediately

register stability. That is, 13 fulltime weeks would be reported as the equivalent of 26 half-time weeks of employment.

2) Hourly wage. This is a calculation of all the hours worked divided by all the money earned before taxes. Again, it is a mean of average earnings, and does not reflect the range and stability of wages. However, it does provide an accurate account of how much money the participants have earned, and when a job is maintained for over a year this indicator stabilizes and reflects wage changes within a job situation[1].

3) Benefits. This variable was reduced to four basic levels. Full benefits means medical and dental coverage, sick and vacation pay, and retirement, and it was rated a 1.0. When a graduate received all of the above, but not retirement benefits, a rating of .9 was given. Anything less was considered partial and rated at .5; no benefits were assigned a zero.

4) Amount of postsecondary transition services. A 0-to-4 scale ranged from no transition services beyond follow-up (0), to supported employment or intense ecosystematic interventions (4). Time intensity is the determining factor. A "1" signifies transition services only slightly beyond what a vocational rehabilitation counselor might provide; a "3" calls for frequent monitoring, but less than 35% of the graduate's employed hours. A "2" indicates any interventions which fall between those two designations.

5) and 6) Positive and negative job changes. Graduates were asked

"After you learned how to do your job, were there any changes, or was the job the same, day after day?" They were probed for changes in supervision, working conditions, job duties, responsibilities, etc. If the graduate did indicate changes, they were asked whether they were perceived as negative, positive, or neutral. This rough indicator of job satisfaction measures vocational success by the participants own standards. It allows that a graduate may indeed be ascending (or descending) a career ladder in a more subjective fashion not indicated by changes of hours, wages or benefits. Changes in job title or employer would be measured in these categories. Graduates decide whether a change is positive, negative, or neutral.

7) Educational level. This measure of postsecondary education and training indicates whether the graduate of the CLP community classroom training is still in high school (.5)[2]. Beyond that, this is a measure of whether a graduate has enrolled in remedial studies (1), college (3), other postsecondary training (2), has reached (4) or exceeded (4.5) a college sophomore standing, completed a training course (5), or matriculated with an undergraduate degree (6).

8) Postsecondary courses completed. Many CLP graduates attempt college or postsecondary training, but fail to complete the courses or accrue college credit. To get a better sense of what is actually happening to CLP graduates in these settings, we had to find out how many courses they actually completed each six-month period.

Results

Percentage of Graduates Employed

Figure 1 displays the percentage of CLP graduates employed at six-month intervals. It is evident that the total employement rate consistently remains at an 80% level across the 48-month period. the graph also shows that the toal is composed of a stable level of part-time (45%) and fulltime (35%) employment.

Insert Figure 1 about here

A contrast was made with the samples from the National Longitudinal Transiton Study (NLTS, Wagner, 1989). Table 2 reports the percentage working for all handicapping conditions, Learning Disabled (LD), Emotionally Disturbed (ED), and LD and ED combined. Since the CLP sample contained LD and ED students, a liberal comparison could be made with this NLTS group. CLP graduates, with an 80% employment rate, compare favorably with the LD/ED NLTS group (51% employed).

The NLTS figures in Table 2 are for both school completers and dropouts. A more conservative comparison would be with LD graduates only. For this group, Wagner (1989) reported 67%

employment. The CLP 80% figure still compares favorable with this group.

Figure 1 and Table 2 show that the reason for the superiority in the total employment rate was due to the difference in part-time employment. The CLP and NLTS samples had similar levels of fulltime employment (35% and 31%, respectively). The CLP group had a much higher level of part-time employment (45% versus 20%).

Insert Table 2 about here

Hourly Wage

The mean hourly wage for CLP graduates over 12 months beyond their community classroom training was $5.41 (n=297 cells). The highest wages were earned at 48 months beyond the community classroom (n=3) at an average of $7.52/hour. The lowest wages were earned at 12 months beyond (n=61) at an average of $5.13/hour. There is, a gradual increase from about four to six dollars per hour. Most of that gain was made during the first year and a half after leaving school. Table 2 shows that the NLTS samples earned in the four dollar/hour range. The $4.39/hour wage of the LD/ED sample was substantively below the $5.80 wage of the CLP group.

Benefits

The mean benefit level for employed CLP graduates ranged from .43 at 24 months beyond the community classroom (n=54) to .27 at 42 months beyond (n=15). At no point did the cumulative group of CLP graduates reach a mean level of partial benefits (.5). Table 3 breaks down the proportion of employed graduates receiving benefits at each level. The percentage of individuals receiving no benefits is lowest at 24 months (34%), but rises and appears to level off at 50% beyond that point. A level of full benefits is highest at 30 months beyond the community classroom training (49%), but subsequently declines to about 40%.

Insert Table 3 about here

Amount of Postsecondary Transition Services

Table 4 shows the proportion of graduates receiving each level of service over time. Graduates received the most intensive service during their first six months beyond the community classroom training, and the lowest levels three years beyond, though the means do not vary significantly after the first 12 months. There are few instances of the most intensive (four) vocational services after the first

18 months beyond community classroom training. The next level of intensity (three) was still being provided to some graduates as late as 42 months beyond. Also, at all times, at least 45% of CLP graduates were receiving some transition services. The team was able to provide this despite the constant increase in the number of interns served.

Insert Table 4 about here

The CLP transition services can be summarized to include: follow-up contact, vocational rehabilitation casework, assistance with postsecondary education or training, on-the-job (supported employment) training, assistance with independent living skills, counseling, social skills training, ecosystematic intervention, resource referral, assistance with job search, pre-graduation contact, and transition planning[3]. We documented the activities of one of our transition specialists over an eighteen month period, and selected eight of those months at random. Follow-up and counseling were the most frequently delivered services (close to 400 instances of each), and were followed by pre-graduation contact, rehab casework, and assistance with job search (about 225 instances of each). On-the-job training and assistance with postsecondary education and training were provided about 165 times each. The least frequently delivered service was resource referral, about 75 times in the eight months of documentation.

Positive and Negative Job Changes

Figure 2 shows the mean number of job changes reported over time. At every interval graduates reported more positive than negative changes. There was a slight decline in negative changes reported over time. The rate of positive changes remained about the same. The mean was always less than one for both types of changes.

Insert Figure 2 about here

Postsecondary Educational Experiences

Table 5 shows that a significant number of CLP graduates enrolled in postsecondary training and education classes 12 months after exiting the community classroom training (31%). This proportion then decreased over time since leaving school.

Insert Table 5 about here

Table 6 contrasts CLP and NLTS participation in postsecondary education. The CLP graduates had approximately twice as much participation, but further inspection of Table 5 reveals that as much as 50% of those who enroll in postsecondary courses do not complete even one class. Still, the 92% participation of CLP graduates in either work, postsecondary education, or a combination compares favorably with the NLTS participants' engaged time measures (Wagner, 1989).

Insert Table 6 about here

Discussion

A comprehensive transition program for youths with mild handicaps was implemented and evaluated over a four year period. The program was ambitiously named the Career Ladder Program, compelling the interpretive question: Have true career ladders for upward occupational mobility evolved for these participants? This question may be answered in a number of ways: employment rate, wage, benefits level, on-the-job changes, and participation in postsecondary education. The longitudinal database offers a unique opportunity to address this question, perhaps in a manner more powerful than previous cross-sectional investigations.

Quantitatively, CLP graduates appeared to fare well, in that 80% of them were employed. This compared quite favorably to the NLTS and earlier investigations. Yet, the reason for this superiority was due to the greater proportion of part-time employment among the CLP graduates. Part-time employment does not suggest upward job mobility. Yet, it may be critical to have young adults engaged in the job market rather than allowing disaffectation and entrance into a permanent underclass status. A related study (Siegel, 1988b) suggested that youths who change jobs *more* frequently in the years immediately after high school will ultimately experience a more satisfying vocational adjustment. The differential value of part-time work versus fulltime employment at this young age is undetermined

The CLP graduates earned a higher hourly wage than the NLTS sample. Also, about half of the CLP graduates were receiving some benefits during most postsecondary intervals, consistent with the large proportion employed part-time. They also reported more positive than negative changes on-the-job and from job to job. The program's counseling and referral component led to a number of graduates' participation in continuing education. But few have completed courses of study. Still, at the time of this writing, 92% of all CLP graduates were either working and/or enrolled in some course(s).

It at first appears that CLP graduates are engaged in employment and education at a substantial level, certainly above the norms of their mildly handicapped peers (cf. Edgar, 1987; Hasazi et al., 1985; Mithaug et al., 1985; Wagner, 1987). Thus, longitudinal vocational services for youths with mild handicaps seem to have an enabling effect. But the question of whether authentic career ladders have been established remains unanswered. Although there were a few individual cases where a graduate attained a management or more professional position, by and large CLP graduates remained in entry-level, low-paying positions. Part of this effect could be due more to the "deskilling" of the labor force than to any so-called disability. Skilled blue collar jobs are disappearing and lower paying, low skill service jobs are on the rise.

It is also possible that the Career Ladder Program needs to add a more intensive occupational training component, either during or post-school. For instance, some corporations are addressing "literacy in the workplace" through continuing and on-the-job education programs. These youths may very well benefit from such efforts, or from intensified tutoring and outreach services in the community colleges.

Finally, follow-up studies are a potential counseling tool. We hope that the main beneficiaries of a follow-up study such as this will be the participants themselves. A personalized 8-way graph like the one in Figure 3 tracks the career progress of each graduate. It is an advanced and enlarged form of the type of data collection which is done on-the-job in supported employment situations, containing precise and nonjudgmental feedback.

Insert Figure 3 about here

By having their own 8-way graph of career progress, individuals can gain a larger, historical perspective, and therefore greater control over their career development; they can judge the trends for themselves. In some cases, they can compare themselves to the larger group and build self-esteem and confidence which will lead to enhanced career direction. If the information can thus enable a youth to see their own progress and continue their efforts, then the continued pursuit of this knowledge will certainly be of value.

The Career Ladder Program has demonstrated a number of substantive gains in the employment of persons with mild handicaps. Postsecondary vocational support, in our view, appears to be critical in helping to attain these employment outcomes. Unfortunately, current vocational rehabilitation services for youths with mild handicaps are time-limited and do not permit the long-term follow-up with a professional benefactor. The current program and its database argue for the provision of such ongoing, follow-along vocational services.

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Table 1

CLP Graduates by Date of Community Classroom Training

Group	CLP Semester	n	n minus attrition	Cumulative Sample
1	Spring 1985	6	5	5
2	Fall 1985	11	10	15
3	Spring 1986	16	14	29
4	Fall 1986	12	12	41
5	Spring 1987	14	13	54
6	Fall 1987	13	12	66
7	Spring 1988	20	16	82
8	Fall 1988	13	12	94
Total N=				105
Lost Contact =				11
Evaluation Sample =				94

Ethnicity of 105 CLP Graduates

	Black	Hispanic	White	Chinese	Filipino	Vietnamese	Japanese	Amer. Indian	Middle Eastern
Total Number	53	23	16	5	3	2	1	1	1
Percentage	50.5	21.9	15.2	4.8	2.9	1.9	1.0	1.0	1.0

Table 2

Employment Characteristics of CLP Graduates Compared to National Longitudinal Transition Study's Preliminary Findings on Youth with Disabilities out of Secondary School More than One Year

	% Working For Pay				
Category	Part Time	Full Time	Total	Average Hourly Wage	Sample Size
NLTS					
All handicapping conditions	17.2	29.2	46.4	$4.35	1326
Learning disabled	19.3	37.9	57.2	4.63	249
Emotionally disturbed	21.5	18.5	40.0	3.94	136
LD & ED combined	20.0	31.0	51.11	4.39	385
CLP (12 months beyond community classroom)	45.0	35.0	80.0	5.80	66

Table 3

Benefit Levels for Employed CLP Graduates by Percentage

	Months Beyond Community Classroom							
	6 (n=74)	12 (n=71)	18 (n=47)	24 (n=44)	30 (n=33)	36 (n=22)	42 (n=11)	48 (n=4)
Full Including Retirement	9.5	18.3	25.6	29.5	33.3	27.3	18.2	0
Full Without Retirement	10.8	15.5	12.8	11.4	15.2	13.6	18.2	50.0
Partial	5.4	7.0	19.1	25.0	9.1	9.1	18.2	0
None	74.3	59.2	42.6	34.1	42.4	50.0	45.5	50.0

Table 4

Distribution of Levels of Postsecondary Transition Services by Percentage

	Months Beyond Community Classroom							
	6 (n=93)	12 (n=81)	18 (n=66)	24 (n=54)	30 (n=41)	36 (n=29)	42 (n=15)	48 (n=5)
Four	15.1	11.1	4.5	0.0	2.4	0.0	0.0	0.0
Three	15.1	9.9	3.0	11.1	7.3	3.4	13.3	0.0
Two	18.3	9.9	13.6	14.8	24.4	17.2	33.3	40.0
One	28.0	24.7	25.8	20.4	12.2	34.5	13.3	20.0
Zero	23.7	44.4	53.0	53.7	53.7	44.8	40.0	40.0

Table 5

Postsecondary Educational Experience of CLP Graduates by Percentage

	Months Beyond Community Classroom							
	6 (n=94)	12 (n=82)	18 (n=66)	24 (n=54)	30 (n=41)	36 (n=29)	42 (n=15)	48 (n=5)
Enrolled and Passed at least one Class	8.5	12.2	16.7	18.5	12.2	20.7	33.3	40.0
Enrolled but did not Pass any Classes	6.4	18.3	6.1	9.3	12.2	6.9	6.7	20.0
Total Enrolled	14.9	30.5	22.8	27.8	24.4	27.6	40.0	60.0
Not Enrolled in any Post-secondary Classes	85.1	69.5	77.3	72.2	75.6	72.4	60.0	40.0

Table 6

Postsecondary Education Participation of CLP Graduates Compared to NLTS Preliminary Findings on Youth with Disabilities out of Secondary School More than One Year

Category	% Taking Courses From Any Postsecondary Institution	Sample Size
NLTS		
All handicapping conditions	14.6	1265
Learning disabled	16.7	245
Emotionally disturbed	11.7	131
CLP	26.7	66

Figure Caption

Figure 1. Percent of Graduates Employed.

Figure 2. Mean Changes On-the-Job for Employed CLP Graduates.

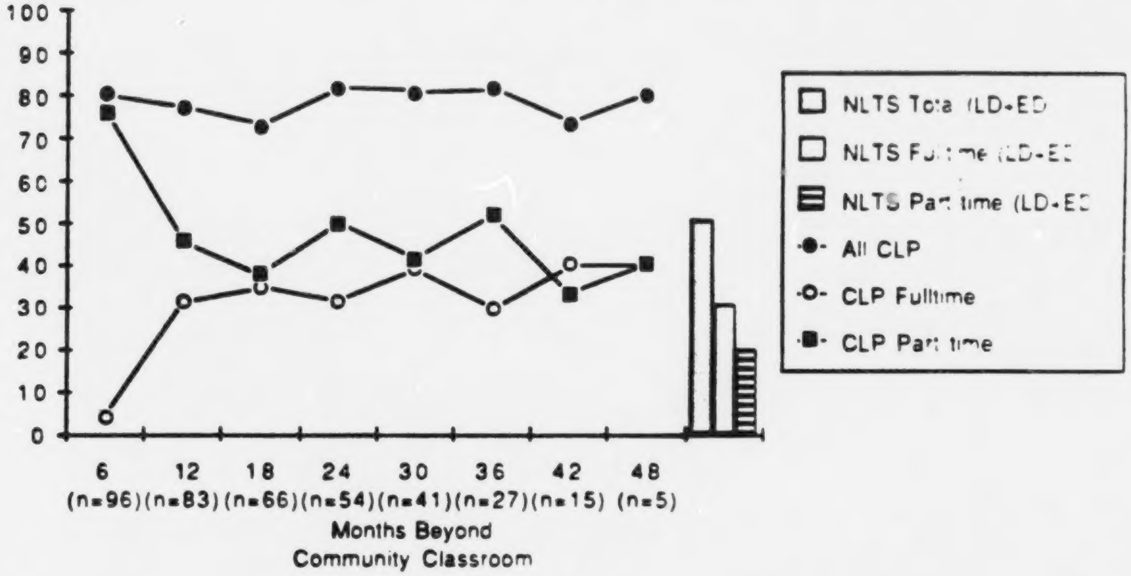
Figure 3. Career Development of Don.

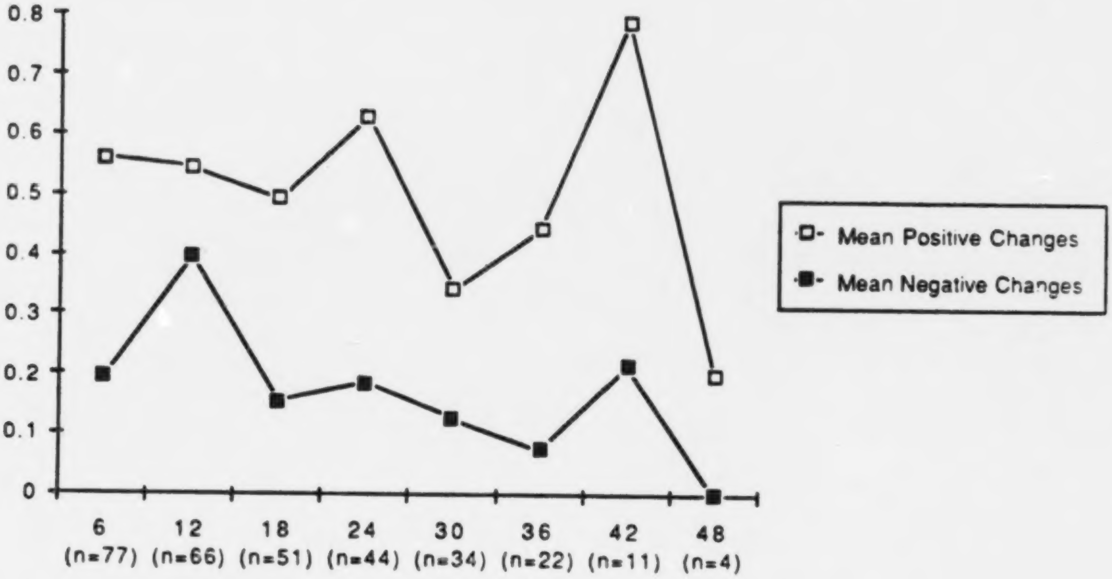
Footnotes

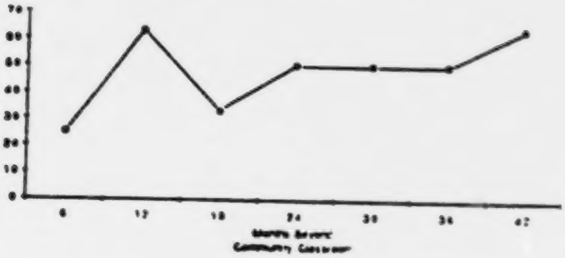
[1] Graduates who served in the Job Corps or did volunteer work were included, and thus depressed the mean wage of CLP graduates. In the Results section, a second figure indicates the hourly wage when volunteers and Job Corps participants are removed from the sample.

[2] We begin collecting data on Fall semester CLP interns during the Spring semester as they may work part-time while completing high school. Also, high school juniors at-risk of dropping out sometimes get into the program prematurely, or others who are scheduled to graduate fail an essential class.

[3] CLP transition services are described in detail elsewhere (Robert & Siegel, 1989).


100
90
80
70
60
50
40
30
20
10
0
6 (n=96)
12 (n=83)
18 (n=66)
24 (n=54)
30 (n=41)
36 (n=27)
42 (n=15)
48 (n=5)
Months Beyond Community Classroom
NLTS Total (LD+ED
NLTS Fulltime (LD+ED
NLTS Part time (LD+ED
All CLP
CLP Fulltime
CLP Part time


0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
6 (n=77)
12 (n=66)
18 (n=51)
24 (n=44)
30 (n=34)
36 (n=22)
42 (n=11)
48 (n=4)
□ Mean Positive Changes
■ Mean Negative Changes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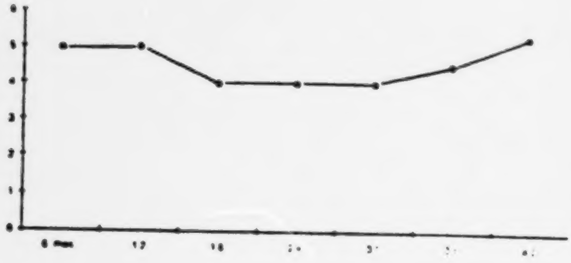
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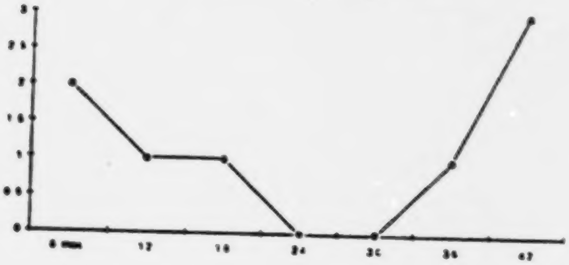
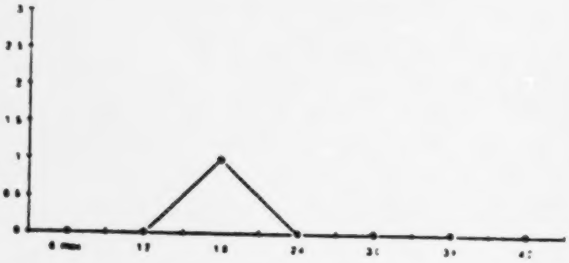

Positive Job Changes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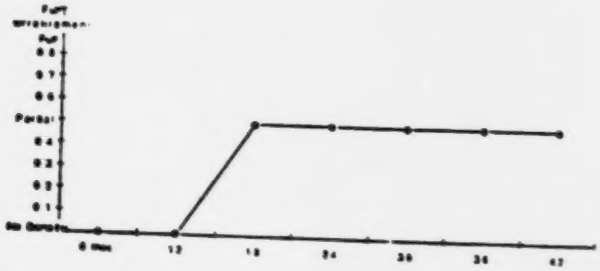
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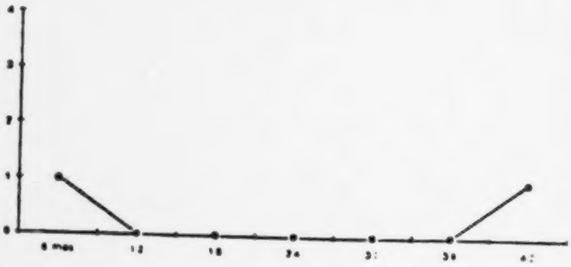
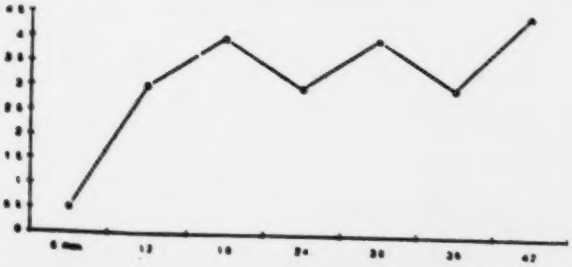
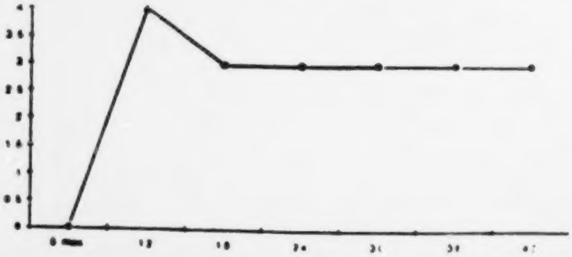

Level of Transition Services


Educational Level


Courses Completed per Semester

Supported Employment for Deaf-Blind Youth in Transition*

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In press, Career Development for Exceptional Individuals.

Abstract

Bay Area Personnel Systems is a consultative supported employment program for deaf-blind youth in transition. The article describes the client and agency levels of operation. Information is provided with regards to individual transition plans, task analyses, instructional programs, and job accommodations. Actuarial data describes seven placements, their pay, types of jobs, etc. Of the seven placements, only one individual was terminated. Case illustrations describe the dynamics of a successful and unsuccessful placement. Ecological variables at the workplace are discussed in terms of the intrusiveness of supervision, interpersonal communication, and social support.

Supported Employment for Deaf-blind Youth in Transition

The past 10 years has seen a marked expansion of nonsheltered employment options for persons with severe disabilities. A number of employment models including central site (Sowers, Thompson, & Connis, 1979), individual placement (Wehman, 1981), and group dispersed placement (Gaylord-Ross et al., 1988; Rhodes & Valenta, 1985) have been validated. The initial supported employment efforts appeared to focus on individuals with mild and moderate mental retardation. Gradually, programs began to serve adults with severe mental retardation (Wehman et al., 1985). The inclusion of persons with more severe disabilities was fueled by the zero rejection notion injected into adult services and the exiting of students who had received community based vocational training in their school programs.

A question still remains, with regard to how well supported employment programs can address individuals with the most severe disabilities. Although there may be individual cases of placements of persons in this category, can there be comprehensive employment of persons with the most severe disabilities? Given that successful placements may occur (cf. Pumpian, West, & Shephard, 1988), other questions arise as to what kinds of staff and co-worker configurations may arise at the workplace (cf. Chadsey-Rusch & Rusch, 1988; Nisbet, 1989).

Multiply handicapped individuals who are deaf and blind have traditionally not been included in nonsheltered employment options. Given their dual sensory, and in some cases, cognitive disabilities, they have often been included in that 'most severe' category (cf. Sailor, Gee, Goetz, & Graham,1988), that is often excluded from employment and other community-based services. Thus, a question arises as to whether persons with dual sensory impairments can be successfully placed into nonsheltered employment. Also, questions related to the nature of the types of support needed from professionals and co-workers need to be addressed.

The Bay Area Personnel Systems (BAPS) is an employment program which places and trains individuals with dual sensory impairments into integrated work settings. The program has a number of components which include: job development, client training, staff and co-worker training, and agency consultation. BAPS is primarily a consultative program which facilitates integrated work placements. It assists agencies in moving to an integrated work model with the deaf-blind population. The purpose of this article is to describe these program components and present outcome data on the program's placements during its initial year of activity. In addition, more detailed case descriptions are made to provide a sense of the types of accommodations and policy factors that must be considered in the employment of this particular population.

Program

The Bay Area Personnel Systems is a consultative resource program which provides supported employment services for deaf-blind individuals. We identified persons in need of such services through our existing contacts with adult service and school programs in a large metropolitan area. A two phase process was instituted whereby BAPS staff implemented a supported employment placement. In the first phase BAPS staff job developed, placed, and trained the client at a nonsheltered work site with one agency. In the second phase that local agency was trained in how to maintain the placement in terms of client support and organizational funding. Five adult agencies and one school district worked with BAPS during its first year. Individual Transition Plans (ITPs) were written in order to specify the resources and commitment each were to provide.

Assessment and Planning

An individual was informally assessed using a situational assessment for supported employment (Gaylord-Ross, 1986). In some cases our program had previous contact with the individual. Any repeated measure data and systematic instructional information proved useful in assessing the individual. Previous to this BAPS staff: conducted significant other interviews whereby staff would find out priorities significant others had in all areas of life (e.g., leisure, domestic, community); accumulated information on hearing, vision, mobility, and communication; likes, dislikes, etc; and spent time observing and teaching with clients in settings familiar to them, e.g., classrooms.

Most importantly, an ITP was developed for the person. The ITP specified vocational as well as related leisure and community objectives. The ITP designated the various agencies' responsibilities, both short-term and long-term, for assuring a successful transition to work. Table 1 presents sample information from the ITP form which was originally developed by Lamar and Rosenberg (1987).

Insert Table 1 about here

Placement

The ITP team determined the types of placements that might be of interest to the client. Environmental inventories and market surveys were done to further assist in the identification of potential work sites. Employers were contacted through personal visits, cold calls, letters, and referrals from other agencies. In one case, the Pizza Hut corporation was engaged because of its nation-wide commitment to hire a proportional number of persons with severe disabilities (Zivolich, 1989).

When meeting with an employer, the employer first identified the company's needs. The possibility of job accommodation and restructuring were also discussed. For example, at Pizza Hut the preparation of a salad bar was typically completed by one person. BAPS staff restructured this job into two separate tasks. Cleaning and chopping vegetables was defined as one job. Taking complete containers of items to the bar itself and arranging their placement was defined as a second job.

It was also explained that for individuals working substantially below the rate of a nondisabled worker, the payment of a subminimum wage based on the employee's performance was possible through a Department of Labor Certification, which BAPS staff could assist the employer and agency in attaining. BAPS also offered the employer the option of a cost analysis, which identified potential jobs and gave an estimate cost savings and expenditures for hiring through supported employment.

Training

Before placing the individual, the BAPS employment specialist spent a few days analyzing the job through observing and talking to others, as well as performing the job tasks herself. Next, a task analysis/job routine sheet and graph was designed to monitor performance in a repeated measures fashion (cf. Gaylord-Ross & Holvoet, 1985). Careful attention was given to how a job may be shared between clients (i.e., a client with different skills performing some of the duties another client may have more difficulty doing). Task analysis data sheets were then used to assist the job coach in training the client. After several weeks this same analysis was further broken down to determine a client's specific level of performance and to identify any areas where there was a need for additional training. An instructional program was designed for the sequence of job tasks. Given the person's dual sensory impairment, particular attention was given to identifying antecedent cues and corrective prompts (cf. Goetz, Guess, & Stremel-Campbell, 1987). Table 2 presents an illustration of an instructional program.

Insert Table 2 about here

Program Transition

Employee instruction. The individual with dual sensory impairments was trained intensively at the work site by the employment specialist (job coach) in a one-to-one fashion. Special cues and reinforcers were utilized for job tasks which proved particularly difficult. When the individual reached mastery levels the employment specialist began to fade out special cues and consequences, as well as her own immediate physical presence.

Staff transition. At the same time the employment specialist was training the client, the former provided a model for the co-workers. Informal disability awareness information was also provided to co-workers. This included a discussion with the co-workers about the abilities of the client. The BAPS staff and agency staff talked openly about how the deaf-blind person communicated, providing examples of certain behaviors that indicated what the person meant. In one instance, co-workers used a cane to get around the workplace and tried several jobs with their eyes closed.

When the client was more familiar with the job routine and demonstrated competence at some of the job tasks, the employment specialist began actively getting co-workers more involved in supporting and interacting with the client. Such contact between co-workers and the target employee could include: offering or providing assistance when the target employee was having difficulty with a task, prompting the person when s/he paused too long while working, reinforcing the person for a job well done, having social/leisure interactions with the individual while working or at breaktime, and providing emotional support if the person was upset.

Besides increasing co-worker involvement, the employment specialist began training the job coach from the adult service agency. The employment specialist explained and modeled the various aspects of her job (e.g., instruction, data collection, co-worker involvement). Gradually the job coach took over the responsibilities of the employment specialist. The latter gave corrective feedback to the job coach and faded her presence out completely (except for intermittent phone contacts or visitations).

On some occasions, a second or third disabled person (but not deaf-blind) was placed at the workplace. Both the employment specialist and the job coach worked together to repeat the job training procedures. Ultimately the employment specialist faded her supervision of the client(s). The agency job coach remained to provide ongoing supervision to the client(s). Such integrated group placements, with the permanent staff supervision and heterogeneous clusters of disabled individuals, offer a cost-effective way to place and supervise individuals with more serious disabilities in nonsheltered settings.

Agency consultation. In addition to client-directed activities, BAPS also assisted the school or adult service agency in placing persons with more severe disabilities. In most cases the agency was already placing individuals with mild and moderate mental retardation into supported employment. BAPS, through inservice sessions and the actual placements, showed these agencies that supported employment was possible with persons having more severe disabilities.

Outcomes

Table 3 summarizes the placements of the seven BAPS participants for the initial 14 months of the program. Also, because of our consultation with five adult agencies, we indirectly facilitated the placement of 10 other individuals with developmental disabilities. Five of the seven direct BAPS placements had dual sensory impairments. The two other participants had severe disabilities and were part of an integrated group placement (two participants per site) with a deaf-blind individual. It is evident that of the seven placements, six are currently working. Leo was let go after 17 weeks of employment. The six working clients are employed from 4 to 10 hours per week (median = 6 hours). The have worked from 11 to 34 weeks (median = 21 weeks).

Insert Table 3 about here

The work sites included a library, a convalescent center, a sit-down restaurant, a nutritional center, and an athletic club. The types of work also varied considerably, including stamping books, salad preparation, laundry, setting tables, and janitorial. All of the jobs had been modified so that the BAPS individual partially participated (cf. Baumgart, Brown, Pumpian, Nisbet, Ford, Sweet, Messina, & Schroeder, 1980) in a portion of the actual job of a nondisabled worker.

In addition to job redesign, there were also a number of tasks that were adapted to insure accurate performance. For example, Tina had a jig placed under a counter so that she could successfully gather cut vegetables. It was later faded out and not needed. Table 4 presents the job tasks for Tina. Table 5 presents some activities for the employment specialist when instructing Tina.

Insert Tables 4 and 5 about here

Table 3 also displays the types of pay for the different participants. Pay ranged from subminimum (e.g., $2.20 per hour) to non-paid, volunteer work. Non-paid work occurred only in cases where nondisabled individuals engaged in the same volunteer work at that site. Subminimum wage was sanctioned through a federal and state Department of Labor Certification which BAPS assisted agencies and employers in paperwork for wage determination. In addition to performance data, careful time samples of the participant's job task performance were taken on a six-month basis.

Case Illustrations

Tina. Besides presenting quantitative outcomes, it should be useful to provide more detail of individual cases. Tina was placed in a full service restaurant to do salad preparation. Tina worked 10 hours per week at $2.13 per hour. Management would like to increase her hours to 15 per week. She commutes to work with her job coach (private car) or sometimes walks and rides the bus. She works alongside two severely disabled co-workers and at least two other nondisabled workers. Tina lived in a group home in the same community. Previously, she attended an integrated public school and participated in community vocational training experiences (Gaylord-Ross, Siegel, Park, & Wilson, 1988).

The specific jobs that were identified at the restaurant were identified based on employer needs and the nature of staff-client supervision. In this case, Tina was placed with two other severely disabled clients and an ever-present job coach. The job of salad preparation was split between two clients. When Tina first came to work she learned to wrap silverware. While she did this, a job coach trained her disabled co-worker to set up a "vegetable schedule" for Tina. This included going to the back refrigerator and getting out all the necessary vegetables to be prepped for the day, then lining them up so that Tina would know what came next. After Tina finished with the silverware, she proceeded with salad preparation by washing and cutting the vegetables. Meanwhile, her co-worker performed other job duties (mopping, emptying the trash, cleaning the parking lot, etc.). Once Tina finished with the vegetables her co-worker filled up the salad bar. Tina gradually learned a number of job tasks related to salad preparation. She persisted in continuing on task with few digressions or pauses while working. She appeared to enjoy her work. Anecdotally, it was noted that on the few occasions Tina was unable to attend her job she became very upset, scratched, bit, and tore her clothing--behaviors that hadn't occurred since her placement at the restaurant.

Leo. BAPS staff began working with Leo when he was a student at a state school for the blind. BAPS staff were originally contacted by the school for assistance with placement. Utilizing the ITP process, the team included: local school district staff, BAPS staff, parents, and several teachers from his school. He was placed in a community work site (a large hospital). On a daily basis, he did inventory in the morning, took his lunch break at home, then worked afternoons folding towels and sheets. Meanwhile, BAPS assisted the ITP team and identified an adult employment program who offered ongoing services to Leo.

Leo was placed in a job at a convalescent hospital in a job working for 20 hours a week. He folded and sorted laundry and assisted in taking laundry from the dryer to the table. After training, his quality of work was equal to that of his nondisabled co-workers. His performance rate was about 30% of his nondisabled co-workers. His job coach was responsible for training and supervising Leo and five other developmentally disabled employees who worked in different parts of the hospital.

As was stated, Leo learned to perform his job tasks in an acceptable manner. He continued to emit vocal self-stimulations. He would occasionally grab co-workers while he worked. The BAPS staff designed a beeper so that he could indicate that he needed assistance. Although his co-workers originally tolerated Leo and actually seemed to enjoy his presence, they eventually turned against him. Interestingly, this seemed to occur as BAPS staff began fading out. Originally, one co-worker and then all of the six co-workers requested that he be removed. Their claim, which was backed by management, stated that his aberrant behaviors and the space that he was taking were too disruptive in the workplace.

Leo offers a case where an individual performed his job tasks successfully with support, but still was terminated from employment. In spite of Leo's aberrant behaviors and the amount of space staff felt he was taking, Leo's co-workers initially tolerated those behaviors and accepted his presence. Over time, though, a political climate, fostered by a few individuals, spread throughout the immediate work setting. Certainly there is a need to further investigate the impact of political climates within the social ecology of work settings. Often positive political climates may ensue which foster adaptations and the retention of disabled employees (cf. Gaylord-Ross et al., 1988). In our experience the job coach may be a critical person in influencing the political climate.

We sometimes learn as much, or more from placements which have negative outcomes. For Leo, we are currently in the process of placing him in another integrated work setting. Certainly we will design a program that enhances the power of his behavior modification program, works with co-workers in order to create political climates that are more accepting, and proactively trains clients and co-workers to socially engage one another.

Discussion

The Bay Area Personnel Systems is demonstrating that individuals with dual sensory impairments may be successfully placed into nonsheltered work settings. Besides the seven individuals cited here, we are in the process of placing four more persons at the time of this writing. A data base is thus emerging which highlights the importance of systematic instruction and job accommodations in this placement process.

Although we have made a number of successful placements, we are still in a transitional phase in our work with adult agencies. These agencies have had success in placing developmentally disabled individuals with mild and moderate mental retardation. BAPS, and programs like ours, are showing that persons with more severe disabilities can also be successfully employed. We have used systematic instruction in shaping these agencies. That is, we verbally explained the employment process for persons with dual sensory impairments. Next, we modeled the the process with their participants (i.e., we placed and trained them). Subsequently, we had their staff (job coach) behaviorally rehearse the process by training the individual at the work site; as BAPS provided cues and consequences to the practicing job coach. Finally, we faded out our staff presence as the job coach maintained these training functions. If needed, BAPS assisted in linking and advocating for key services, e.g., O&M, Braille, Speech. A parallel process was instituted with the agency in teaching them the funding and policy mechanisms of supported employment with the "most severe" population. Ultimately, it is hoped that the agency will not be in need of BAPS consultation, as they repeat a number of placement exemplars.

A final, unresolved point deals with the nature of client supervision at the work site. We have used an integrated work placement model which includes the permanent presence of a job coach. Nisbet and Hagner (1988) and others (Zivolich, 1989) have argued that supported employment placements do not need such permanent supervision. In fact, Nisbet would argue that overly supervised placements could interfere with the natural social communication and integration process with co-workers. To a great extent, this is an empirical issue. Certainly, in our model of supervision we encourage job coaches to transfer supervision and social exchanges to co-workers as the participant is moved to decreasing proximity from the job coach. The modulation of co-worker contact, staff supervision, agency conversion, and systems change are certainly variables which should receive further empirical examination and discussion (cf. Goetz & Gaylord-Ross, 1989).

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TABLE I

Individual transition plan (adapted from Lamor & Rosenberg, 1987)

Student's Name TINA

Page 2 of 3
ITP Date ____

Transition Planning Issues & Long Range Goals	Objectives: Skill Training and/or Provision of Support Services	ITP Team Member Activities					
		Parent/Student		School/Employer/Vendor		Agency	
		Action	Time Line	Action	Time Line	Action	Time Line
Employment: Tina will work at Pizza Hut in Novato for 10-15 hours a week	Identify work schedule (days, times, tasks).	Jackie will observe Tina at her work-site.	4/88	Mellanie and Stacy will do time studies of tasks, develop work schedule, and start date.	3/88	Carol will visit and observe on jobsite.	3/88
	Begin employment.						
	Provide initial transportation to and from worksite.			Mellanie, Stacy, and Karen will provide training to Tina.	3/88		
	Pursue transportation mode to and from worksite, home, & Community Integration Program.			Mellanie, Stacy, and Karen will provide transportation the 1st 3 weeks of employment.		Carol, Jackie, and Eileen will identify transportation mode to continue after 1st 3 weeks.	3/88
Recreation: continue community integration program utilizing list of facilities generated during inventory.	Develop an inventory of community recreation and leisure facilities.			Stacy will share potential recreation/ leisure sites from inventory.	2/15	Carol and BAPS staff will identify job coach to continue training at Pizza Hut.	3/88

TABLE 2

Instructional mobility program for Tina

CONSUMER: Tina

PROGRAM: Mobility

OBJECTIVE: Tina will use her cane daily at the Pizza Hut to independently walk from the parking lot to the register, then walk to the table area. After the job at the table is completed she will walk to her work area. At the end of her work day Tina will walk from her work station to the restroom, then out to the parking lot SEE ROUTE BELOW, at least 8/10 working days.

REINFORCEMENT: Pat on shoulder, sign/say "Good Tina." VR+ faded to R+ at end of route

TRAINING PROCEDURE: SEE TEACHER CUES/ROUTE STEPS.
Give initial cue at beginning of routes and give corrections after 2 second latency or if Tina does step incorrectly.

SCORING:
+ = independent responses only
- = incorrect responses

TEACHER CUES - Parking lot to register	Route Steps
1. Sign/say "get cane," "time to work - Pizza Hut"	1. Tina gets out cane and gets out of car.
2. Hand on door.	2. Finds door.
3. Assist to knock.	3. Opens door/knocks.
4. Physical assist to turn left.	4. Turn to left.
5. Physically assist left arm to touch counter	5. Hit wall with can or touch with arm.
6. Physical assist.	6. Trail/cane.
7. Turn body left.	7. Turn left at opening.

Register to table	Route steps
1. Sign/say "table to work."	1. Hit wall with cane.
2. Physical assist.	2. Straight with cane.
3. Physical assist cane to hit left wall.	3. Hit wall with cane or touch with arm.
4. Physical assist.	4. Trail/cane.
5. Turn body left.	5. Turn left at opening.
6. Physical assist.	6. Lean cane against counter - sits down.

TEACHER CUES - Table to work area	Route Steps
1. Sign/say "finished"	1. Gets cane - stands.
2. Physical assist cane to hit right wall.	2. Trail/cane.
3. Physical assist.	3. Straight with cane.
4. Physical assist cane to hit opening	4. Hit both walls with cane.
5. Turn body left.	5. Turn left.
6. Physical assist.	6. Lean cane against counter.

Table 2 (continued)

End of Work - Route to bathroom	Route Steps
1. Sign/say "work finished," "get your cane."	1. Gets cane.
2. Physical assist by moving cane to hit designated surfaces and left hand to trail.	2. Straight to open space.
	3. Turn left.
"	4. Touch bar.
"	5. Trail/cane.
"	6. Cane hits door space/juke box.
"	7. Straight to door.
"	8. Open door.

Route to parking lot	Route Steps
1. Sign/say "time to go."	1. Get cane (right hand)
2. Physical assist by moving cane to hit designated spots and arm to trail.	2. Open door.
	3. Cross open space.
"	4. Turn right.
"	5. Touch bar with arm.
"	6. Trail/cane.
"	7. Pass open space.
"	8. Trail/cane.
"	9. Turn left.
"	10. Find door.
"	11. Open door.
"	12. Cane to first step.

NEXT PROGRAM: Route to day program.

TABLE 3

Individual outcome data for Bay Area Personnel Systems

Name	Diagnosis	Employer	Job	Wage	Hrs./Wk.	Wks. Empl.	Staff Hrs.	Status	Pay
Bill	D/B	Senior Nutritional Center	setting tables & janitorial	V	7.5	15	job coach on site	E	N/A
Alice	D/B	Library	stamps books	V	4.5	19	job coach on site	E	N/A
Margaret	SH	Library	stamps books	V	4.5	11	job coach on site	E	N/A
Tina	D/B	Full Service Restaurant	salad prep.	$2.13/hr.	10	34	job coach on site	E	Direct Pay
Ron	SH	Full Service Restaurant	salad prep.	$2.13/hr.	10	31	job coach on site	E	Direct Pay
Leo	D/B	Convalescent Center	laundry	$.70/hr.	20	17	job coach on site	F	Contract*
Lana	D/B	Athletic Club	janitorial	$.70/hr.	4	22	job coach on site	E	Contract*

Note: SH=severely handicapped; D/B=deaf blind; E=employed; F=fired; L=laid off; R=resigned; V=volunteer work
* Contract between Adult Agency & Employer

TABLE 4

Job tasks for Tina

1. Route to bathroom.
2. Turn on light.
3. Put on apron.
4. Route to Register.
5. Get card from purse.
6. Hands to co-worker.
7. Puts card back in purse.
8. Says hello to co-worker.
9. Goes to work station.
10. Finds large bucket on ground.
11. Gets pitcher from shelf
12. Fill with ice once.
13. Dump ice in bucket
14. Fill pitcher with water
15. Pour water in bucket
16. Continue until water is at bottom of rim.
17. Return pitcher to shelf.
18. Get knife and cutting board from side of iced tea machine.
19. Get lettuce from counter and begin cutting.
20. When one section has been cut Terry pushes it to left of cutting board
21. Repeats until all lettuce has been cut.
22. Finds rag on counter and wipes cutting board.
23. Finds pitcher on shelf and fills with water.
24. Find carrots and grater on counter.
25. Grate carrots and put in pitcher of water of bleed.
26. Finds cabbage and knife on counter.
27. Cut cabbage with knife.
28. Find pizza cutter on counter and dice cabbage.
29. When cabbage is very small add to lettuce mix.
30. Find rag on counter and wipe cutting board.
31. Cut any needed vegetables (broccoli/tomatoes).
32. Lift cutting board to wipe off.
33. Put cutting board to right of iced tea machine.
34. Wipe counter.
35. Rinse knife and put to right side of iced tea machine.
36. Route to register.
37. Hand check-out card to co-worker.
38. Route to bathroom.
39. Turns on light.
40. Washes hands.
41. Takes off apron.
42. Route to front door.

TABLE 5

Some of the Instructional activities of employment specialist

1. Sign "Pizza Hut" upon arrival.
2. Sign "Bathroom to Wash Hands."
3. When Tina is in bathroom: Get lettuce from refrigerator and bring to Tina's workspace. Put out core and take off outer layers.
4. Place lettuce on right side of where cutting board will be.
5. Get large bucket from back and place on floor on left side of Tina's workspace.
6. When Tina is finished in the bathroom, she should come to the register and remove her sign-in card from bag. (May need to sign "card" to her.)
7. After she is signed in for work, point towards her work area. Tell her "Time to Work."
8. She should get cutting board and knife from right side of iced tea machine. (If not already there, get from back room by sink.)
9. When Tina begins lettuce check salad mix in large bowl in refrigerator to see if it looks o.k. to go out on salad bar. If yes, put it out, if no, throw away and refill bowl with mix from large bucket in refrigerator. If bucket is below 1/3 full, 5 heads iceberg and 1 large romaine will need to be cut. If above 1/3 full, 3 iceberg and 1 small romaine will need to be cut. Friday bucket will always need to be filled 3/4 full with salad mix.
10. Get all salad bar items from refrigerator (should be on roller cart covered with plastic wrap). If not on cart-get cart from underneath oven and fill with items from refrigerator.
11. Check each container for fullness and cleanliness. Clean containers should be in back by refrigerator on wire rack.
12. When full and clean put out on salad bar. Chart is on counter behind plates.
13. Put appropriate spoons and ladles in each container.
14. Check dry items on salad bar for fullness (raisins/noodles/croutons/sunflower seeds). Refills on wire rack by refrigerator.
15. Get 2 carrots, 1/4 head purple cabbage, and grater from back and place to right side of Tina's cutting board. Carrots and cabbage in baskets in refrigerator. Grater in blue milk crate by back sink.
16. When Tina is through cutting iceberg lettuce she should begin cutting romaine. It should be cut in half for her to make it easier to handle.
17. When she is finished cutting all lettuce and putting in bucket the sponge/rag should be place to the right side of cutting board so she knows to wipe off board before beginning carrots.
18. While Tina is grating carrots check each container in refrigerator which is used to refill salad bar (cucumbers/onions/tomatoes/broccoli/olives/egg/cheese/peas). Each should be at least 3/4 full so as salad bar runs low each can be refilled from containers.
19. Cut and refill as necessary putting to the side what Tina is able to do (broccoli and tomatoes).
20. Label and date each container (masking tape and pen).
21. When Tina finishes carrots put rag back to right side of cutting board so she can wipe off board.
22. As she is wiping board put 1/4 head of cabbage, knife, and pizza cutter to right side of board.
23. You will need to sign "more" to Tina when she is dicing cabbage since it is difficult for her to know when it is small enough.
24. When she is finished dicing and adding cabbage to salad mix put next item (broccoli or tomatoes) to the right side of board.
25. When all items have been cut and put in containers Tina should wipe off board and counter and put back on right side of iced tea machine.
26. Sign "finished" and prompt as needed to get sign-out card and get to bathroom to wash hands.
27. While Tina is in bathroom her work area will need to be cleaned up. Sink cleaned out and floor swept.
28. Bring salad mix to back sink and put in large colander to drain. Take mix from colander and put back in large bucket with date on cover. Put in refrigerator.

Review of:

Handbook of Vocational Special Needs Education (2nd Edition)

By:

Gary Meers

To appear in:

Education and Training in Mental Retardation

Reviewer:

Robert Gaylord-Ross
San Francisco State University

The second edition of the Handbook of Vocational Special Needs Education, edited by Gary Meers, offers a fine compilation of career education programming. Meers is an established leader in this field and the volume reflects his expertise and experience. In reviewing this handbook edition I will highlight the strength and need areas, as is consistent with the perspective of the book.

Dr. Meers takes a primary interest in the special needs students - disadvantaged and mildly disabled - throughout the volume. This is most effective in the introduction where Meers sets a futuristic tone for employment opportunities. He usefully explains how high technology expansion far from eliminates less able workers. His illustrations point to the need for effective vocational education which will enable the special needs youth to be competent and versatile in high tech and related occupational settings. The style of the initial chapter is upbeat in highlighting contemporary statistics on drop-outs, unemployment, etc.

The focus on special needs students is legitimate, yet it may seem to give short shrift to the major advances made in recent times with students with severe disabilities. This concern relates to the obligatory, yet questionable chapter defining the different types of disabilities. It seems that the reader could be referred to other volumes for this material, or it could be provided in an already excellent Glossary.

A number of comprehensive chapters describe vocational programming principles. The chapters by Bies and Veir fully describe legislation and its mandates for an array of support services. An articulate and information rich chapter by Anderson and Strathe is only imperfect in its placement in the rear, rather than in the front of the book. The transition chapter by the same authors gives the reader a taste for this process. This chapter and the book's eschewing of case illustrations is unfortunate. The lifeblood and professional appeal to vocational education lies in its inspirational successes and struggles.

Brown and Retish give a well rounded description of postsecondary services (and include a number of case illustrations). A critical question remains as to what proportion of special needs youth effectively access such services. Siegel, Robert, Greener, and Gaylord-Ross, (1989) have demonstrated the importance of a postschool transition specialist to follow-along school leavers and ensure they are directed into appropriate vocationally-related services. The chapters by Vasa and Stechelberg makes a useful beginning at identifying career education activities for parents. Hopefully, future volumes will expand on this work, given that parent career education is typically overlooked or given short shrift. Ditto could be said about the administrative chapter by Holde. Whenever possible, a top-down approach is desirable when establishing career education programs. Administrative support is particularly useful when dealing with employers in establishing business-education partnerships.

The most potentially exciting chapters for this reviewer are those dealing with direct instructional programming. In this regard, the White chapter on curriculum and instruction with the subtitle, "Catalysts for Equity," is most engaging. Furthermore, White's infusion through reciprocal curriculum is quite appealing. Yet, the chapter needs more examples from different curriculum domains to elucidate the reader. It seems that we have made few advances beyond Gary Clark's (1979) seminal work and illustrations of infusion. From my perspective, the field is becoming quite expert in conducting community-based, work experience. For example, the Kingsbury chapter offers a most comprehensive and readable presentation on this topic. Yet, we are still floundering with regards to how occupational/vocational training curriculum becomes integrated with general academic education.

The assessment chapter by Veir might point the direction to such infusion efforts. In my mind, this tour de force chapter contributes to how the volume weaves concepts and activities in a most impressive fashion. The material dealing with informal assessment and monitoring should be most helpful to educators and preservice students.

The chapter addressing skill generalization is in many ways the most challenging of the handbook. Greenan advances a curriculum model for promoting generalization which is logical and replete with usable forms. The model is recursive in its curriculum, implementation, and evaluation phases. For the sake of completion, reference could have been made to the exciting work on vocational skill generalization being done with students with severe disabilities. (cf. Horner, McDonnell, & Bellamy, 1986).

In summary, the Handbook of Vocational Special Needs Education provides a wealth of information about current practice in the field. The authors write from authority and direct experience in the field. Both preservice and inservice trainees will find it a useful resource and text. Therefore, reflects well on a field which contains scholars like Gary Meers.

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QUALITY OF WORK LIFE EXPERIENCES, SEGREGATED & INTEGRATED, AS YOU TELL IT

A thesis submitted to the faculty of
San Francisco State University
in partial fulfillment of the
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in
Special Education

by

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INTRODUCTION

In contemporary American culture work is viewed as an inherently worthwhile pursuit. The preeminence of the employment sphere of human endeavor is demonstrated by the value ascribed to it for its own sake and not solely as a means of survival. Not having obtained gainful employment is often seen as a moral failure and reflection of inferior worth as citizens (Topliss, 1982). Wolfensberger (1972) describes the activity of work as paramount to all that is normal in adult lives. "Work is seen as a major means of Normalization and, therefore, should receive a prominent place in the management scheme." (p. 111). The importance of work to community assimilation of individuals with developmental disabilities cannot be over emphasized. Employment brings not only economic self-sufficiency but enhancement of presence and participation in mainstream society. In addition to this socio-economic appraisement,maintaining employment can bolster extrinsic beliefs about a person's worth and capabilities. Because work is a principle means of involvement in affairs deemed meaningful by most, gains in self-esteem may also result from the single accomplishment of having a job (Pomerantz, 1986). Work; the nature of the employment environment and satisfaction with the experience, may be said to be inextricably donative to the degree of quality in life enjoyed by all.

Given the paramountcy of work in the normal life experience of adults, employment in the community is expected to afford not only the triumph of integration but the prosperity of an enhanced existence for persons with developmental disabilities (Brown et al., 1983; Edgerton, 1979; Gersten, Crowell, and Bellamy 1986; Kernan and Koegel, 1984; Matson and Rusch, 1986; Pomerantz, 1986; Wehman and Kregel, 1988). It is known individuals with mental retardation can work and be employed with some success (Bellamy, Horner, and Inman 1979; Brown et al., 1983; Gaylord-Ross, Gaylord-Ross, and Forte 1986; Gaylord-Ross et al. 1988; Gold 1972; Sowers, Thompson, and Connis 1979; Vogelsberg, 1986; Wehman, 1986; Wehman, Kregel, Shafer, and Hill, 1987). The habilitative thrust to help more individuals acquire and use skills out in their communities reflects the belief that employment in settings predominated by nondisabled workers is instrumental in lending a more auspicious soundness to the lives of persons with developmental disabilities (Bellamy, Horner, and Inman 1979; Brown et al., 1983; Hill, Wehman, Kregel, Banks, and Metzer 1987; Rusch, 1981; Wehman, 1981). Using these facts and acting on these beliefs, supported employment programs have proliferated to offer greater mainstream job opportunities. With federal commitment (Will, 1984) and state implementation (Fontanoza, 1988) the offering of a "better" life vis-a-vis integrated employment ("...for persons for whom competitive employment traditionally has not occurred, or has been interrupted or intermittent as a result of a developmental disability and who need ongoing support." Federal Register, 1987, P.L. 100-146, Sec. 102, 14/A) has begun.

Recent questions about the efficacy of supported employment activities and ensuing consumer benefits have been answered primarily with more objective indicators of success. Results of efforts in supported employment have been reviewed by Mosley (1988). Outcomes were described in terms of higher wages, instructional procedures, and demonstration projects while the literature emphasized movement of workers from segregated rehabilitation environments (i.e., sheltered workshops) to retention of jobs in more natural workplaces (i.e., competitive positions in neighborhood businesses). Inge, Banks, Wehman, Hill, and Shafer (1987) did discuss more broadly the effects of competitive job placement on other aspects of the lives of supported employment consumers. Using a series of measures (AAMD Adaptive Behavior Scale, a parent/guardian survey, and an array of physical health measures) an experimental group of competitively employed workers with mental retardation was matched with a control group of sheltered workshop employees and compared. Results suggested positive effects of integrated employment in quality of life. Yet, few researchers have formally addressed the assumption held by many, that more integrated employment settings influence quality in life experienced by disabled workers on the job, by defining the characteristics of the "better" work environment in terms additional to wages/benefits, skill acquisition, and job retention. Nor have many vigorously sought the perceptions held by the disabled worker about his or her experience on the job. Indicators of success in the delivery of supported employment services must refer to more than these customary accounts of working in the community. While certainly convincing in their implications, movement to the integrated workplace, increased wages, and training success, are alone insufficient to assess the complexity of circumstances and sentiment that may describe life's quality.

This study intends to gather a wider variety of information about the job as experienced by an employee with developmental disabilities. Quality of work life is defined (see Table 1) in a number of ways: 1) quantification of answers to the Quality of Work Life Questionnaire developed for this study to represent features of employment contributory to quality in work life, 2) income level, 3) workplace integration level, and 4) assessment of social support found in the workplace as measured by the Social Support Questionnaire (Park, Cameto, Tappe, and Gaylord-Ross,1988). This triangulation of indicators is intended to do more than attempt corroboration of data. It postulates a relationship between the subjective queries found in personal perceptions and the pragmatic criterion of income level with degree of integration at the job site. Together both serve to offer a more

Table 1

Terms and Definitions

developmental disability	a primary diagnosis of mild or moderate mental retardation, as ascribed by the Client Developmental Evaluation Report (CDER) of the California Department of Developmental Services & measured by individual I.Q. scores classified according to the American Association on Mental Deficiency
supported employment	placement of individuals in regular community jobs & provision of support (i.e., job coaching, travel training, employer consultation, follow-up) at the work site as needed to sustain employment individual competitive employment--paid work for at least minimum wage in work settings which are predominated by nondisabled workers in a community business or industry *regarded as more "integrated" than enclave circumstances enclave employment--paid work in a group of individuals with developmental disabilities who are supervised among nondisabled workers in a community business or industry *regarded as less "integrated" than competitive circumstance
segregated work environment	sheltered workshop designated as vocational training & paid employment for persons with developmental disabilities and predominated by a "disabled" worker population
integrated work environment	community business or industry providing paid work in regular job setting predominated by "nondisabled" worker population
quality of work life	measured by: 1) level of wage & level of work site integration map 2) scores on Quality of Work Life Questionnaire structured to ask questions pertinent to worksite attributes & work experience 3) scores on Social Support Questionnaire structured to ask questions pertinent to level of social support in the workplace & satisfaction with that support

comprehensive indication of quality in work life. Admittedly, the discussion of quality of life is multifarious and the sorting of which indicators are most relevant in the study of quality of work life is troublesome. However, Bauer (1966) offers this question to mollify, "Is it better to have a crude measure of the variable one is interested in or a precise measure of a variable which is only an approximation of what the investigation is interested in?" (p. 17). Both structured interviews and descriptions of wages with levels of integration at the place of employment will be provided. Together the construct of quality of work life will be considered.

Hypothesis

The question put forth in this study is, "Does the quality of work life as experienced and perceived by adults with developmental disabilities improve after entering a more integrated community work setting of a supported employment program?" The dependent variable studied is the quality of work life. Employment in more integrated job settings stands as the independent variable.

Purpose

The concept of quality of life is abstruse but certainly has major implications for the field of habilitation, rehabilitation, and education. It extends logically from the principles of normalization with relevance to national as well as individual standards of service delivery. The recognition of quality of life in general as a component of program development has occurred only recently, though the goal of enhanced quality has long been implicit in the provision of the more normal and fulfilling events in the lives of persons with developmental special needs (Kernan, Hubbard, and Keenan, 1986; Matson and Rusch 1986). The need to attend to quality of life issues in the more inclusive purview is also underscored by a current concern of providing, planning, and advocacy agencies for quality in service and in the lives of service recipients (Association for Retarded Citizens-California, 1987; Berkeley Planning Associates, 1986 and 1988; California Department of Developmental Services, 1985 and 1987; California State Council on Developmental Disabilities, 1988; Commission on Accreditation of Rehabilitation Facilities, 1987; United Cerebral Palsy Associations, 1988).

Of equal consideration is the right of individuals, to not only receive efficacy of service but, to express personal opinion regarding those very activities to which they are subject. Because of this, it appears mandatory to determine more comprehensively if movement to more integrated employment environments does offer an effect on quality in work lives as told by the individuals who enter less restrictive employment settings.

Quality of Life

In 1986 Landesman summoned professionals to define quality of life and to standardize methods of measurement. Sailor, Gee, Goetz, and Graham (1988) stated that quantifying quality of life in a way that allows for measurement of outcomes for persons with the most severe disabilities is one of the greatest challenges faced in the coming years. Researchers have offered some interpretation. Matson and Rusch (1986) gave the social indicators of community integration and acceptance as measures of quality of life. O'Connor (1983) highlighted evidence that social relationships and social support (emotional, informational, and material aid) are vital in determining quality of life. Bellamy et al. (1984) insisted that paid work in integrated settings substantiates one's personal, social, and political value. The implication that quality of life is improved as a result of fairly compensated labor reinforces the fiduciary attribute of work as an important dimension to an improved life. Some investigators are attempting to measure increases in community presence with the development of instruments that quantify or map levels of community integration, social support and/or participation in integrated work environments as leading to improved quality of life (Allen, 1988; Brown et al., 1984; Galloway and O'Brian, 1981; Keith, Schalock, and Hoffman 1986; Park et al., 1988).

These definitions and measurements are valuable and substantiate practical action to the principles of community-based vocational services, least restrictive environments, and normalization. However, the parameters of quality in the work experience or the attributes of the "better" job circumstance for persons with developmental disabilities have not been exhaustively enumerated. McAfee (1986) suggested several reasons to look at the quality of work life in a different light: 1) equality in the workplace means equal concern for feelings as well as equal pay and equal opportunity, 2) satisfaction with one's job is linked to productivity, attendance, and termination, 3) mental health is influenced by the healthiness of one's job attitude, 4) vocational educators would benefit from a more thorough knowledge of vocational adjustment patterns and problems, and 5) employers who hire persons with disabilities need to be aware of factors influencing job satisfaction.

The analysis of quality in life is difficult. Yet, it remains necessary that the concept be given an unhampered definition for purposes of inquiry. Quality of life often refers to a wide variety of objective attributes of lifestyle. These may be thought of as an assemblage which imparts an overall beneficial milieu. Andrews and Whitney (1979) referred to quality of life as both an outsider's judgement of quality covered in objectively defined measures (i.e., decibels of noise, crowding) and the personal evaluation of privately known aspects of life. Katzner (1979) stated that quality in life abides in the individual's perception of it. People live in an objectively defined environment but perceive a subjectively defined universe. Campbell, Converse, and Rodgers (1976) explained in their investigation of the quality of life in America that satisfaction with a domain of life is a reflection of enriched quality in the composite life experience. This satisfaction is seen as dependent on one's evaluation of separate attributes of that domain. Simply, the issue of whether quality of life improves fixes on value judgements made concerning the innumerable features of one's life. Despite the complexity of the concept, Landesman (1986) called for the identification of environment variables, both social and nonsocial, that mediate different quality of life outcomes for individuals with mental retardation.

If one proceeds with the belief that the measurement of quality in any domain of life refers to both subjective perception and objective attributes, one must insist on the necessity of talking about an individual's idea of her/his circumstances. Brown (1988), Blunden (1988), and Heshusius (1981) also insisted that the consumer view should be an overriding value in decisions about improvement in one's life. Without familiarity with these opinions and feelings, research may promulgate very little about his or her quality of life. Some answers to questions concerning job satisfaction have been solicited from employees with developmental disabilities Rosen, Halenda, Nowakiwska, and Floor (1970) queried deinstitutionalized workers with mental retardation regarding satisfaction with employment on the "outside". The Minnesota Scale of Employment Satisfaction was modified and used to compare answers from this sample with results from nondisabled worker groups. General conclusions indicated that the employees with mental retardation were somewhat less satisfied with their employment than the nondisabled population although both groups expressed their greatest dissatisfaction on the same sub-scales of compensation and sensitivity. Seltzer (1984) interviewed individuals with mild mental retardation who had been competitively employed. Using a modified Job Descriptive Index (Smith, Kendel, and Hullin, 1969), her results suggested that downward mobility (unemployed but previously employed competitively or workshop employed but previously employed competitively) was related to less job satisfaction. Mosley (1987) investigated job satisfaction of employees in supported employment using interviews conducted with persons diagnosed as severely mentally retarded and reported a greater satisfaction with present employment situations when compared with previous experiences in sheltered workshops or training programs.

If personal satisfaction with circumstances and experiences may be indicative of quality in one's life, then it remains important that investigations of programmatic outcome continue with the use of more inclusive or varied measures. These inquiries must recognize the significance of gathering opinions and perceptions from those very consumers of service one struggles to serve. Such contributions are inestimable to any conclusions drawn regarding the success of supported employment as a means to improve quality of life.

METHOD

Participants

Thirty employees with the primary disability of mental retardation who worked in either a sheltered workshop or a supported employment enclave (see Table 1 for definitions) of the Association for Retarded Citizens of San Francisco were used to assemble an experimental and a control group of fifteen participants. Because random assignment to a workshop or to a more integrated work site in the supported employment program was not possible, a larger sample was drawn randomly from the greater population in these settings and pre-tested. This was done in order to make available a substantial pre-tested sample of workers moving to more integrated job sites of the ARC supported employment program (i.e., from workshop to enclave, workshop to competitive job, enclave to competitive job). Some of these workers would later comprise the experimental group for post-test purposes.

The initial draw was based upon three criteria. The first consideration asked that participants' cognitive impairment fall within the mild and moderate ranges of mental retardation as defined by the American Association on Mental Deficiency. The second sought sample members who did not use wheelchairs. Despite no entry criteria differences between the agency's sheltered workshop program and supported employment program, these limits in selection were made because the pattern of supported employment placement in this particular agency revealed more activity with this type of employee. Placement from supported employment enclaves into supported employment competitive jobs was also an emphasis in this organization, hence, the inclusion of enclave employees in both the control and experimental groupings. The final outstanding consideration was one of language. Because the structured interview used many questions that required fair receptive capabilities and expressive skills, workers without primary use of spoken English were not included in the population for the initial random selection. Consumers who communicated manually or those who understood a first language other than English were excluded. It is understood that this narrowing of the worker pool infringes upon the generalizability of any results. However, since responsiveness to questionnaire items demanded clear communicative exchange and the study afforded no interviewer fluent in sign or other languages, the limits on the studied population were made.

As pre-tested employees in the experimental group were identified by placement in more integrated settings of the supported employment program, they were matched with pre-tested counterparts who did not move to more integrated working environments. Matching was completed according to the level of mental retardation with I.Q.'s varying from 40 to 68. Fifty-three percent of the sample was classified as mildly mentally retarded and 47% as moderately involved for each group. The mean I.Q. score for the control group was 51.2 and for the experimental group was 54. Gender matching was approximated with 77% females in the experimental group compared to 60% females in the control group. Matching was also complete with regard to pre-test worksite. Both groups contained 10 members who worked in the sheltered workshop at the time of pre-testing. Both groups also held 5 members who worked in supported employment enclaves during their pre-test interviews. Ages ranged from 21 to 64 years with a mean of 33.5 years for the control group and 30.5 years for the experimental group. There was only a moderate range in functioning level within each group as determined by the Client Development Evaluation Report used by the state Department of Developmental Services and its regional contract agency, Golden Gate Regional Center. Expressive language abilities varied in each group with participants who spoke in unclear short phrases to those who offered easily understood and lengthy articulation. More specific information about adaptive behavior was not gathered. The fact that these individuals were eligible for services delivered to adults with the primary diagnosis of mental retardation was taken as evidence that each was limited in independent function in the community.

Instrumentation

Quality of Work Life (QOWL) Questionnaire

A position statement by the Association for Persons with Severe Handicaps called for the quality of employment and related day and vocational services for individuals with disabilities to be judged by the same criteria used to evaluate the employment of others in our society (TASH, 1983). Subsequently, Bellamy et al. (1988) suggested that the way to begin focusing on quality in supported employment was to look at the conditions and outcomes that workers in general consider important. Considerable research has been devoted to the problem of measuring job satisfaction and quality of life among nondisabled persons according to Gysbers (1984). Methods based on self-report gained the widest acceptance. Growing numbers of people have accepted the need to monitor a broad range of social indicators in the investigation of quality of life (Andrews and Witney, 1976). The common pursuit has been to identify a limited but comprehensive set of significant indicators or components of the work experience that appear to affect quality of work life or satisfaction. Over 50 years ago Hoppock (1935) surveyed research and conducted landmark studies that illustrated how important work was in making life satisfying. Using Hoppock's beginnings with the work of more contemporary investigators, domains and specific attributes of a work environment and work experience were identified as the scope from which the QOWL Questionnaire would be developed for this study.

Herzberg et al.(1959) regarded sets of factors as important in influencing job satisfaction (achievement, recognition, advancement, responsibility, job content) and dissatisfaction (compensation, supervision, co-workers, conditions, company practices). Smith et al. (1969), in the development of the Job Descriptive Index (JDI), delineated 4 areas of satisfaction in which workers were questioned: work, pay & promotion, supervision, and co-workers. In the monumental task of surveying the quality of life in America, Campbell et al. (1976) used the domains of: 1) challenge--interesting work, learning opportunities, use of skills, 2) comfort--conditions, job content, 3) financial reward--pay, benefits, security, 4) co-workers--relationships, and 5) resources--supervision, support. Gruneberg (1979) recognized attributes relating to job satisfaction as those of content (success, recognition, worthwhile pursuit, application of skills, identification with job) and context (pay, security, supervision, social workgroup interactions, participation in decision making). Hopkins (1983) acknowledged an aspect specific measurement of quality in work life that included a series of facets: promotion, pay, benefits, security,

chance to make friends, co-worker interactions, relations with supervisors, development of skills, proper amount of work, help and information, enough time to do work, clear responsibilities, authority to do the job, interesting or challenging duties, opportunities to see results, hours, pleasant environment, commute, freedom to decide how to do the job, and freedom from conflicting demands.

Rosen's et al. (1970) adaption of a nondisabled worker satisfaction scale for a sample of adults with moderate to borderline mental retardation included subdivisions of items in the areas of general job satisfaction (type of work and company), supervision (employer relations), compensation (wages and benefits), co-workers (others' attitudes), and job sensitivity (feelings about position in social hierarchy). Satisfaction was spoken of as including an overall satisfaction with the job itself and with various aspects of the individual's work environment. Seltzer (1984), with the modified Job Descriptive Index, used the employment domains of work, pay and promotion, supervision, and co-workers to ask questions of adults labeled mildly mentally retarded who had been competitively employed.

In an effort to validate the content and confirm socially the intent of the QOWL Questionnaire used in this investigation, a group of workers and employers was surveyed regarding descriptions of employment features they considered to be representative of a "good" job. The group was composed of four employed adults with mental retardation (not sample members), four employed nondisabled adults, and two employers. Attributes mentioned included: wages, benefits, and promotion, comfortable conditions, positive and respectful supervisors, pleasant and helpful co-workers, interesting, stimulating and preferred types of work, atmosphere of open communication, and chances to make friends/talk with others.

As finally executed the QOWL Questionnaire offered questions in the work experience domains of financial reward (7 items on pay, benefits, security, and promotion), relationships (7 items on supervisors and co-workers), conditions (14 items on job content, hours, and nature of the work environment), and integration (7 items on physical presence and interaction with co-workers).(see Appendix 1). Specific questions from Campbell et al. (1976), Smith et al. (1969), and Seltzer (1984) guided the initial development of questionnaire content. These were later modified or expanded upon after reference to information provided by the employee/employer group mentioned above. Questions were constructed to read with as little complex vocabulary or morphology as possible. A total of thirty-five items were used in a format requiring only "yes, no, sometimes" or "not sure/ I don't know answers". All questions were intended to reflect employment life and the perceptions held by respondents about their experiences of work. Despite Sigelman's et al. (1980) conclusion that more cognitively able (those with higher I.Q's) persons with mental retardation are better apt to answer questions and less likely to acquiesce, a number of unfavorable items (approximately one third) were mixed with those favorable (i.e., Do you think your pay is too little? Is the place uncomfortable?). In addition, a standard re-phrased antithesis of an item was also written for each item (i.e., Do you feel safe at your job? *Do you worry a lot about getting hurt at your job?*). These "opposites"were used to solicit and/or corroborate answers if the interviewer suspected acquiescence or a lack of understanding on the part of of the respondent.

The last draft of the questionnaire was presented to a number of vocational habilitation professionals in the field of developmental disabilities (social worker, case manager, supported employment job developer/job trainer, supported employment program director, workshop supervisor, and workshop program director). Each was asked to evaluate the validity of questionnaire content and operational clarity by addressing the following questions: "Do items adequately represent a work environment and experience?" and "Can questions be understood by the population for whom they are intended?" The draft was also field tested by interviewing six employed persons having moderate or mild mental retardation. This, together with the assessment by the professional group, prompted an elimination, addition, and/or alteration of items due to a lack of internal validity, difficulty in concept or inappropriateness of wording. The finished QOWL Questionnaire had several advantages: 1) was directed toward specific areas of quality rather than a global satisfaction response, 2) asked respondents to describe work and their experience on the job so it is both job-referent and self-referent, and 3) provided information that was used to both infer and describe quality.

Mapping

A quality of work life map was constructed to illustrate each participant's movement in worksite environments together with changes in wage level over the course of the inquiry period (see Appendix 2). On one axis the map marks four degrees of job site integration: 1) segregated site, workshop, interaction with public/nondisabled co-workers not available, supervised by agency staff, 2) integrated site, group, interaction with public/nondisabled co-workers not required in job, supervised by agency staff, 3) integrated site, group, interaction with public/nondisabled co-workers required in job, supervised by agency staff, and 4) integrated site, individual, interaction with public/nondisabled co-workers required in job, supervised by employer. The mapping space is bounded on the other axis by four income classes: 1) productivity based wage up to 50% of legal minimum wage, 2) productivity based wage between 50% and 100% of legal minimum wage, 3) legal minimum wage, and 4) wage exceeding legal minimum wage. The work experience of participants located in the lower left corner of the map would be characterized as one of lesser quality while movement to the upper right would indicate an increase in quality of one's work life.

Social Support Questionnaire (SSQ)

The Social Support Questionnaire was developed by and is currently used by the staff of the Social Support Project of San Francisco State University. The questionnaire in total is intended to assess the type and degree of social support rendered to non-disabled, mildly disabled, and moderately disabled individuals. It is composed of three sections: 1) Social Embededness (connections with significant others in one's social environments), 2) Perceived Social Support (delineations of frequency and type of support provided to the respondent), and 3) Reciprocity (determinations of support that the respondent provides to others). Each section is to be used across four settings including residential, school, work, and community (see appendix 3). For purposes of this investigation the three sections were administered to solicit answers to questions referring to the frequency of support received and reciprocated as well as satisfaction with support provided but only in the employment environment. The number of questions was modified after initial interviews revealed a general sample difficulty with a few items. Out of the eighteen questions in the second section, four were eliminated. These same four were not used in the third section.

Procedure

This investigation is a pre-test/post-test comparison group design. Pre-test structured interviews (using the QOWLQuestionnaire and SSQ) with sixty-eight randomly selected ARC-SF workers were conducted by the author at the onset of the inquiry period (beginning March 1988). Each interview was held at a work site familiar to the respondent and in an office or work space that offered a quiet and private hour to hour and a half. A standard introduction designed to explain the purpose and procedure as well as to reduce concerns about the process (i.e.,"There are no right answers or wrong answers and you don't have to answer a question if you don't want to. It is O.K. to say 'I don't know' if you really don't know the answer") was provided. Confidentiality and the importance of the participant's opinion were also stressed. Prior to the onset of questioning, oral and written consents to participate were given by each sample member. This also allowed the investigator to obtain demographic, wage, functioning level, employment and training history, and job site integration information from agency staff and agency records.

The QOWL Questionnaire commenced the structured interview session with standard open ended questions in order to establish rapport and solicit ancillary information on consumer perceptions. Respondents were then asked to answer questions to follow with a "yes, no, sometimes" or "I don't know". If participants did not appear to understand the meaning of a word or question or demonstrated a tendency to acquiesce, a re-phrasing was offered. If comprehension was still doubtful, the question was scored "NS" (no score/not sure) and the interview continued. The scoring direction decided upon was a function of the construct of quality of work life and demarcations of quality attributes by this investigation. Answers indicative of attributes of quality were scored 3 (i.e., Can you get a raise? "Yes") Answers that negated a facet of quality were scored 1 (i.e., Is your pay too little? "Yes"). Answers that vacillated or gave the interviewer a "sometimes" were scored with a 2 (i.e., Do other workers ignore you when you need help? "Sometimes"). High score possible on the QOWL was 35X3=105 while low score was 35X1=35 if all questions were answered.

The SSQ portion of the interview followed. Again a uniform explanation was given to describe the subject of questions to be asked ("about people you work with and the kind of support/help they give you") and the type of answers required ("all the time, most of the time, some of the time, never"). Respondents were asked to answer how often a particular activity or behavior occurred using a range of responses ("always"--scored 4, most of the time"--scored 3, "some of the time"--scored 2, and "never"--scored 1). The Perceived Social Support section also included a question asking for a level of satisfaction with support provided (scored similarly with a range from 4 to 1). A standard example was provided and the interview proceeded. High score possible in the second section was 56 with the low score at 14. While high score possible in the third section was 52 and low was 13.

The quality of work life wage and integration mapping was completed after relevant data were collected from agency staff and personal files of each sample member. Post-test interviews with fifteen pre-tested workers who had later been placed into more integrated supported employment job sites were conducted after the worker had been on the new job for at least three months (and no longer than six). Each of these experimental group members was matched with a pre-tested worker who continued at the job in which she or he had been working at the time of the first interview (workshop or enclave). These matched control group members were also interviewed after a period of at least three months (and no more than six). Again, the same instruments and format were used as those during the pre-test. Wage and integration level data were also collected and mapped again. A re-test interview for instrument reliability analysis was conducted approximately one month after the post-test with five control group members and five experimental group members using the QOWL Questionnaire.

RESULTS

The initial statistical test employed was a 2-way analysis of variance (ANOVA) with one between subject factor and one within subject factor. The between subjects factor contained two levels corresponding to the experimental and control groups. While the within subjects factor was represented in two levels as the pre-test measurement and the post-test measurement of the dependent variable, quality of work life scores. This analysis was performed on each of the data sets derived from the QOWL Questionnaire, the Social Support Questionnaire, from wage level, and from worksite integration level. No weighting of items was done. The study did not attempt to assess the relative importance of each facet or attribute of the workplace and work experience. Some researchers have pointed out that in a summated index even powerful weights are unlikely to significantly influence composite scores (Seashore and Taber,1975).

Significant main effects were found in all analyses save those using quantities from the Social Support Questionnaire. F ratios on SSQ scores are not presented. Results obtained on the QOWL Questionnaire were $\underline{F}\,(1, 56)=14.486$ $\underline{p}< .001$, on wage level were $\underline{F}\,(1,56)=28.196$ $\underline{p}<.001$, and on workplace integration level were $\underline{F}\,(1,56)=25.774$ $\underline{p}< .001$. Interaction effects were also most prominent with

F (1,56)=12.141 p< .001 on the QOWL Questionnaire, F (1,56)=19.58 p< .001 on wage level, and F (1,56)=25.774 p< .001. Table 2 presents F ratios for the QOWL Questionnaire. Table 3 presents the F ratios for wage level and for workplace integration level. With the use of the ANOVA to examine relationships in collected data, an assumption of homogeneity of variance among groups is carried. Variances, too, were compared and analyzed. It is concluded that in a case (e.g., wage level) where variances were unequal, questions regarding the strength of relationships in the data may be raised. Larger sampling or the use of a nonparametric statistical test could be employed in order to answer those questions.

Newman-Keuls post hoc comparison tests were also performed on mean scores from these three sources. Significance at p< .01 was found for the experimental group on post-tests of the QOWL Questionnaire, wage level, and workplace integration level. In all instances these means were significantly different (higher) than the experimental pre-tests and both pre-tests and post-tests of the control group. Figures 1 and 2 illustrate these means. Figure 3 presents all mean scores derived from the Social Support Questionnaire from which no statistical significance ensued.

In addition, Neuman-Keuls comparisons were made on means extracted only from the data collected on those participants whose pre-test work circumstance

Table 2

QOWL Questionnaire Scores
2-Factor ANOVA Table

Total Sample (N=30)

Source	F-ratio
Treatment (less integrated/more integrated) (control group/experimental group)	14.486**
Session (pre-test/post-test)	7.089*
Interaction	12.141**

*p< .01
**p< .001

Table 3

Wage and Workplace Integration Scores
2-Factor ANOVA Table

Total Sample (N=30)

Source	F-ratio (Wage Level)	F-ratio (Integration)
Treatment (less integrated/more integrated) (control group/experimental group)	28.196**	25.774**
Session (pre-test/post-test)	1.762	25.774**
Interaction	19.58**	25.774**

**p<.001

Figure 1

QOWL Questionnaire
Mean Scores

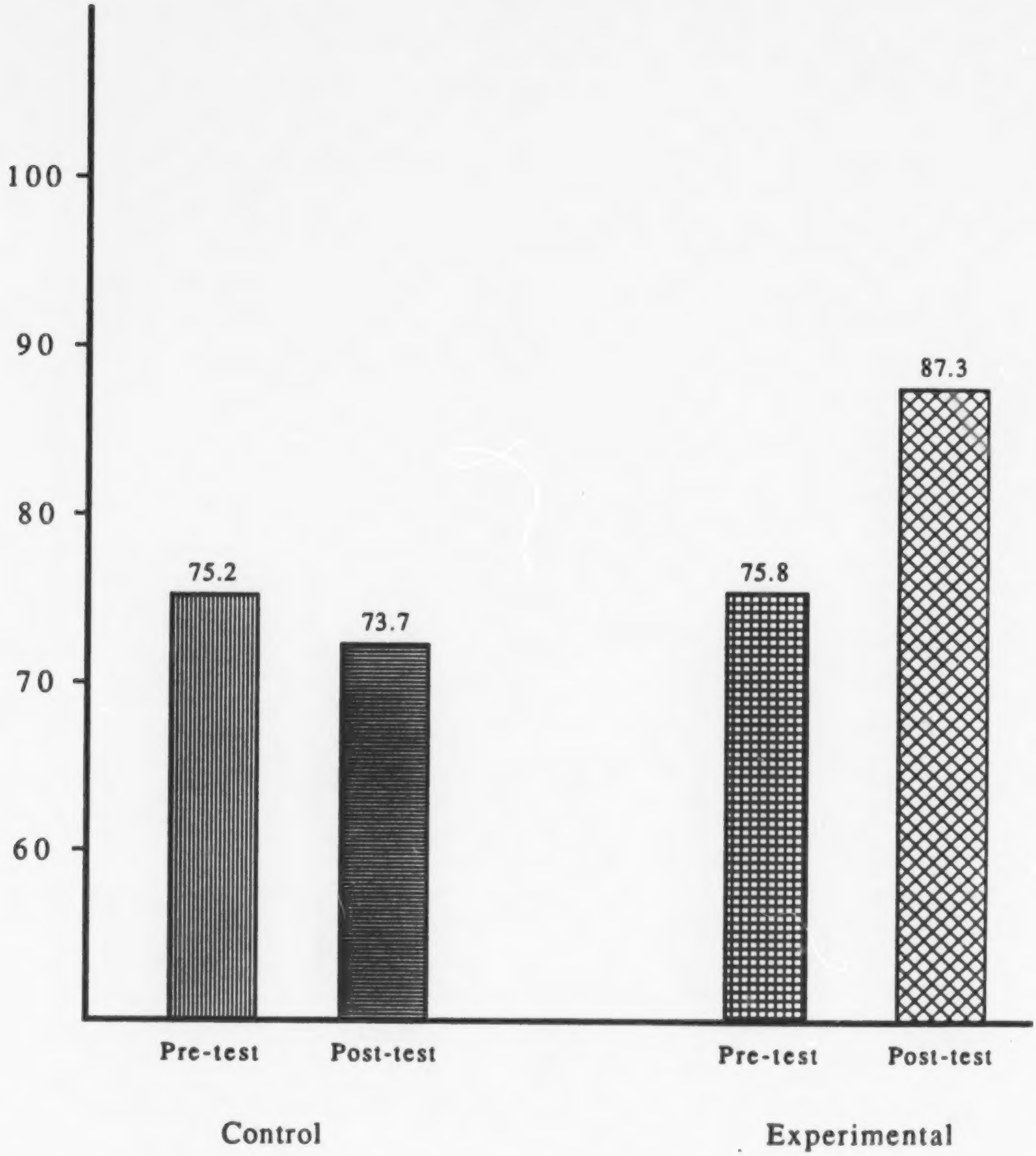


Figure 2

Wage and Workplace Integration Levels
Mean Scores

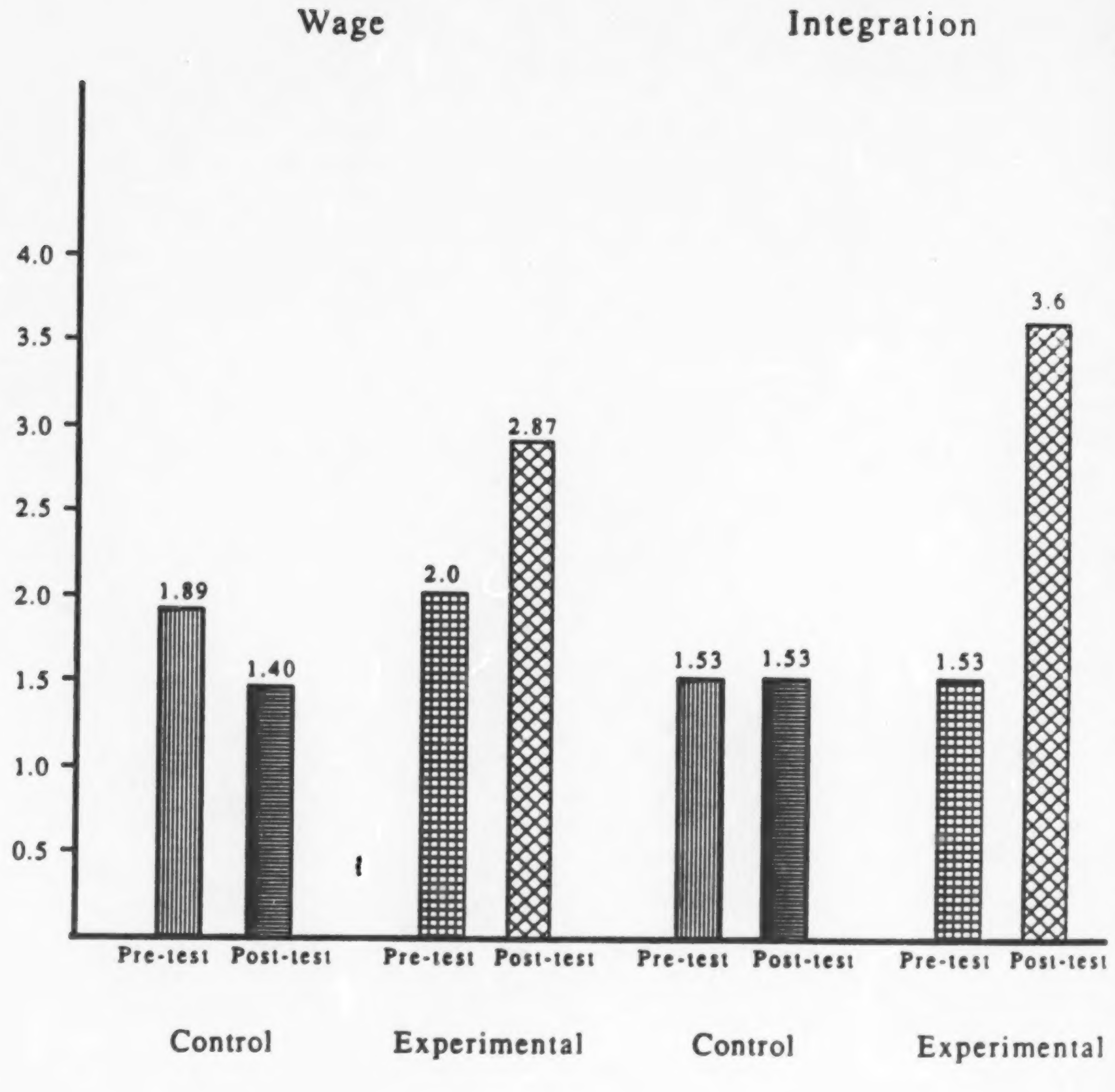
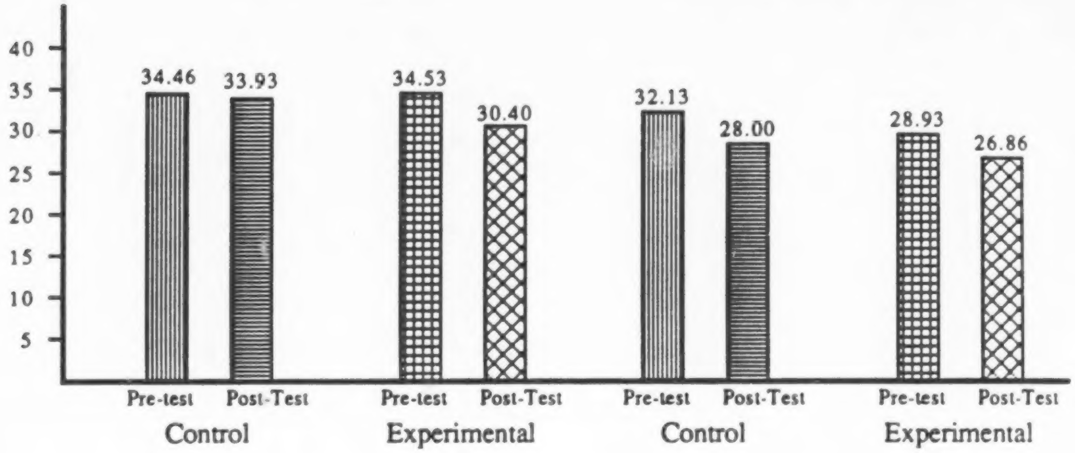


Figure 3

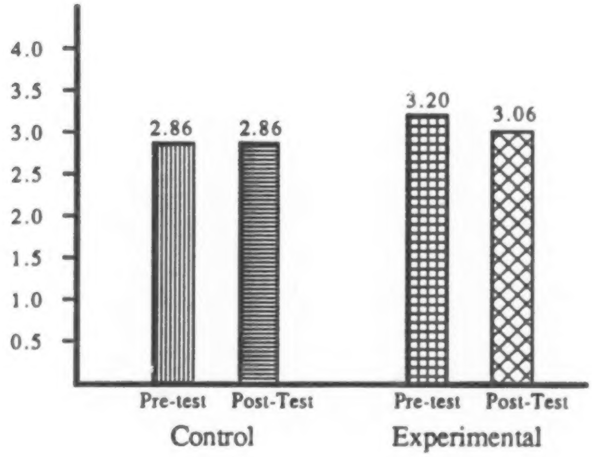
Social Support Questionnaire
Mean Scores



Perceived Social Support

Reciprocated Social Support

Level of Satisfaction with Social Support



was the sheltered workshop (10 of the 15 in the control group & 10 of the 15 in the experimental group). Again, significance at $p < .01$ was found for the experimental group on post tests of the QOWL Questionnaire, workplace integration level, and wage level as well as on pre-tests of the QOWL Questionnaire and workplace integration level. The pre-test wage level of the experimental group was also significantly smaller than the later post-test level and control group wage means dropped between pre and post examinations.

Pearson product moment correlations were determined between post-test scores on all measures for the entire experimental group and control group. Table 4 presents those figures and significant positive correlations between QOWL Questionnaire scores, wage level, and workplace integration level, between perceived social support scores and reciprocity of support, and between wage level and workplace integration level. In addition, Spearman's Rho correlation test was used to compare ten re-test scores on the QOWL Questionnaire with post-test figures in order to determine some measure of instrument reliability. Results indicated $p=.912$ $p< .01$.

Appendix 2 provides Quality of Work Life Maps which describe movement of each experimental group member and each matched control group member with regard to level of workplace integration and wage.

Table 4

Pearson Product Moment Correlation Table
Post-Test Scores

	QOWL	SSQ/ Perception	SSQ/ Satisfaction	SSQ/ Reciprocity	Wage Level	Integration Level
QOWL	1					
SSQ/P	-.088	1				
SSQ/S	.255	.197	1			
SSQ/R	.237	.712*	.296	1		
Wage	.703*	.129	.198	.211	1	
Integ.	.864*	.148	.265	.226	.901*	1

*.01

DISCUSSION

This investigation was an exploration of quality of life, specifically, quality of work life (the dependent variable studied). A multi-faceted measurement scheme was chosen to reflect the multidimensional concept of quality and implemented to compare the experiences of workers with mental retardation who worked at jobs in more restrictive settings and those who worked at jobs in more integrated settings (the independent variable studied). Structured consumer interviews in conjunction with the collection of "harder" data (wage and workplace integration levels) mark this study as broader in both method and purpose. Implicit in the hypothesis examined is the assumption that employees with cognitive impairments enjoy a better work life when working in more integrated work environments.

Findings are encouraging in terms of substantiating both beliefs in the preeminence of community integration and assumptions about supported employment offering improved quality in one's work life As results indicate, the primary differences between control and experimental participants were in higher QOWL Questionnaire scores, wage levels, and workplace integration levels for the experimental group members. This reflects the tenets of researchers prominent in the movement to provide educational and rehabilitative services that are functional, community-based, and aimed at life enhancement

(Brown et al., 1983; Bellamy et al., 1979; Matson and Rusch, 1986, Wehman, 1981). Results also corroborate conclusions drawn by Inge et al. (1987) and Seltzer (1986) regarding the life enhancing effects of employment in competitive environments and by Mosley (1987) regarding supported employment outside a sheltered workshop or training program. The high positive correlations between QOWL Questionnaire scores, wage levels, and workplace integration levels emphasize an incontestable connection between these measures and lend concurrent validity to the QOWL Questionnaire tool employed in the investigation.

Inferences about social support in the workplace are not as clear. There were no significant differences between comparison groups with regard to the frequency of perceived support, reciprocity of support, and level of satisfaction with support. If improvement in work life quality denotes increases in these areas, then such enhancement was not evidenced. One may surmise, because SSQ means (pre-test and post-test for both groups) fell in the moderate range of scores, workers perceived a substantive amount of social support with moderate satisfaction in both the less integrated and in the more integrated employment environments. Despite the fact that results from the SSQ revealed no meaningful differences, other indicators of quality in work life were outstanding in their change. If improvement in the quality of work life is accepted as increases in workplace integration, increases in wages, and increases in worker confirmation of quality attributes in specific employment circumstances, than the answer to the question is given. Quality of work life is advanced after movement to a more integrated working environment of a supported work program.

Some caution, however, is advisable when considering external validity of findings. It was not possible (nor advisable) to randomly assign participants to less integrated workplaces and to more integrated workplaces. Therefore, subject selection bias was diminished by a random selection from the agency population for pre-test purposes and a subsequent matching of pairs for control and experimental groups. The sample is representative only of individuals from one providing agency who may be described as having moderate to mild mental retardation and at least a moderate facility with a first language of spoken English. These limits do not allow relevance of results to persons challenged with more severe disabilities or to those with primary use of other languages. Observations from one short interval in time (3-6 months) and from this narrow sample are of limited applicability to any sweeping generalizations. Yet, outcomes of this study are heartening and suggest continued research to refine guidelines needed to measure the degree to which programs, treatments, and environments facilitate the more rewarding and postive life experience of individuals with developmental disabilities. Recommendations call for future investigations that are longitudinal in design, use varied instrumentation (to embrace the complexity of the construct), enlist wider samples, and solicit from the source (the consumer of special services).

The strength of this investigation lies in its use of a variety of data. Participants' personal evaluations of their workplaces were counted to augment conclusions about better employment circumstances and the subsequent implication of success for the supported employment program. With the pursuit of best practices in the fields of education and rehabilitation is the mandate for more complete definitions of quality of life. What composes quality in life cannot be described without the perceptions of individuals whose lives one strives to enhance. The views of the consumer must be counted to expand any affirmation of accomplishment in the arena of human service.

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CHAPTER 4

Research in Vocational Special Education

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The field of vocational special education addresses the need to prepare students with disabilities for the world of work. Recent surveys have found that only 20% to 70% (median 30%) of disabled adults are gainfully employed. A national "transition" movement has begun that attempts to move disabled students leaving school to successful employment. Such transitional programs include

1. Career counseling
2. Occupational training
3. On-site work experience
4. Vocational assessment
5. Interagency collaboration between school and adult service agencies
6. Job development and placement
7. Supported employment and follow-up services

It is hoped that such comprehensive and longitudinal programs will reverse the exceedingly high rate of unemployment.

The purpose of this chapter is to review the most important research topics in vocational special education. The question of program efficacy is critical: Do the components of special education programs lead to substantive gains in student learning and performance?

We have identified five topics that currently share preeminence in the vocational special education field. The first, actuarial type of research deals with follow-up studies of disabled individuals. If vocational training programs are efficacious, then a significant proportion of their graduates should be successfully employed. In this sense, follow-up employment data is the bottom-line, primary indicator of program effectiveness. As our review indicates, though, there are other important measures, such as quality of life and social support, that ought to be included in the evaluation of program effectiveness. Thus, our second topic addresses social support systems in the workplace.

Vocational special education is primarily concerned with the efficient learning of a large number of job-related skills. The major challenge is to make sure that skills learned in a training setting will transfer to a real work setting, as well as be maintained after the student has graduated. Our third topical review examines techniques to promote skill generalization in vocational contexts.

Social skills may be the most important vocationally related skill to learn. Job retention research has pointed to the fact that interpersonal problems on the job are as important as other reasons for job termination. Social skill training at work sites is just beginning to emerge as a full-fledged research endeavor, and is the fourth topic under review here. It is possible that such training procedures may enhance job retention and satisfaction, engendering a higher rate and quality of social interactions, as well as building a network of friends and social support.

Finally, the cognitive behavioral notion of self-management offers promise for solving many problems in vocational special education. Self-management has individuals self-monitor and self-evaluate their performance. It is a technique that can induce generalization in responding across settings and people. It may also be included in "process" approaches to social-skills training, which have the person interpret the meaning of a social context. Above all, self-management enables the person to function more independently in vocational and other settings and is the fifth topic in our review.

Thus, this chapter attempts to make a comprehensive review of the most critical issues in vocational special education. A number of syntheses of the current status of our data bases on the five topics are made. Training methods supported by data are highlighted. The needs and directions for future research are signaled. We hope to provide the reader with an understanding of the many exciting developments in vocational special education.

FOLLOW-UP RESEARCH

At first glance, the reporting of employment outcomes would seem to be a fairly straightforward endeavor. The investigator simply identifies the population to be studied and then makes the necessary arrangements and calculations that will produce an employment rate. However, a review of

the literature documenting such attempts reveals diverse methodologies and findings that are very often misleading or tenuous. Furthermore, some disability groups have been the subject of voluminous study, while others have been neglected. The journalist's six stock questions—who, what, where, when, why, and how—provide a constructive approach to an examination of the motives, methods, and results of follow-up studies.

Why does an investigator engage in such a study? Most studies share similar concerns, but the motivation to get people off welfare rolls and save taxpayers money, for example, can be in conflict with the more altruistic desire to give handicapped people a happier life. What are the criteria of a successful outcome? Community adjustment is a generally agreed-upon goal, but it has been viewed as anything from sheltered employment at subminimum wage to gainful employment above the poverty level, from successful marriage to social and interpersonal satisfaction. Who exactly is the population of interest? Populations and participants can be identified by diagnosis as well as by the receipt of services. For example, there is still controversy over the populations inferred by labels such as Educable Mentally Handicapped, and by services such as Resource Specialist Programs. Where does the study take place? The variations between urban and rural, prosperous and impoverished environments, need to be controlled if any comparability of the findings is to be considered. When does the study take place? It may be over a period of years or a single probe. It may be done during a time of recession, war, low overall employment rates, high immigration rates, low public concern for persons with handicaps, or other events likely to have an impact on the targeted group's outcome. Finally, a review must consider methodology: how the population was chosen, and how the investigation was conducted. One must critically analyze how the investigator decided upon and measured the factors considered to be of most importance. Was numerical measurement emphasized, or did the study take a more ethnographic approach? Only then can the results of the study be correctly understood. This review will highlight those aspects of studies that exemplify the above dimensions.

Table 4.1 provides a guide for the investigator who wishes to obtain a general sense of the state of follow-up studies. The information presented reflects some of the emerging concerns of intervention and follow-up. Studies are presented in alphabetical order. Sample size and the disability group involved are then listed. Following that, the nonsheltered employment rate is presented. If no distinction was made in the study, that fact is noted as well. Whenever possible, the type of region is listed: metropolitan, urban, suburban, and rural (see Hasazi, Gordon, & Roe, 1985, for definitions). Finally, the main concerns of the study are summarized in the

Text continues on p. 180

TABLE 4.1. Summary of Follow-up Studies of Handicapped Students and Adults

Study	*N*	*Disability Group*	*Nonsheltered Employment Rate*	*Type of Region*	*Main Concerns*
Ballantyne, McGee, Patton, & Cohen (1984)	2,000	All special education	85%	All (Oklahoma)	Program evaluation; project dissemination
Baller, (1936)	173	Moderately retarded	19% (including homemaking)	Urban & rural (Nebraska)	Improve sampling procedures; investigate successes
Bolton, Rowland, Brookings, Cook, Taperek, & Short (1980)	225	All handicaps & disadvantaged	56%	All (Hot Springs Rehabilitation Center)	Overall adjustment of former clients; program evaluation
Brickey & Campbell (1981)	17	Moderately & mildly retarded, sensory impaired	76%	Urban (Columbus, OH)	Program evaluation; job retention
Clemmons & Dodrill (1983)	42	Epileptic	43% (including postsecondary education)	All	Correlation to WAIS and neuropsychological tests, vocational outcomes
Dalton & Latz (1978)	1,395	Mentally retarded, seriously emotionally disturbed, & orthopedically handicapped	75%	All (Pennsylvania)	Development of information systems for rehabilitation agencies
Delp & Lorenz (1953)	41	Moderately retarded	12%	Metropolitan (St. Paul, MN)	Outcomes of public school training programs
Dinger (1961)	333	Educable retarded	83.2% (including homemaking)	Urban (Altoona, PA)	Improving school curriculum
Edgar (1987)	39	Mildly mentally retarded	13% (including sheltered)	All (Washington)	Improving school curriculum; interagency cooperation
Edgar (1987)	12	Sensory impaired	17% (including sheltered)	All (Washington)	Improving school curriculum; interagency cooperation
Edgar (1987)	115	LD/behavior disordered (dropouts)	30%	All (Washington)	Improving school curriculum; interagency cooperation
Edgar (1987)	160	LD/behavior disordered (graduates & ageouts)	61%	All (Washington)	Improving school curriculum; interagency cooperation
Fardig et al. (1985)	113	LD, mildly retarded, seriously emotionally disturbed	50%	Rural (Florida)	Employment outcomes in rural areas
Fernald (1919)	325	Institutionalized "subnormals"	14% (including homemaking)	All (Massachusetts)	Investigating link between retardation and crime
Gill (1984)	194	All special education	50%	Urban, suburban, rural (Pierce Co., WA)	Employment and postsecondary educational outcomes
Goros & Kowalski-Glickman (1983)	60	Deaf-blind	47-48%	Suburban	Program evaluation
Hardy (1968)	40	Reading handicapped	100%	Urban (Toronto, Ont)	Social adjustment
Hasazi, Gordon, & Roe (1985)	459	All special education	54%	All (Vermont)	Development and evaluation of programs
Hasazi et al.(1985)	242	Educable & trainable mentally retarded	43%	All (Vermont)	Development and evaluation of programs
Kernan & Koegel (1984)	48	Mildly retarded	23% (including homemaking)	Metropolitan (Los Angeles)	Longitudinal tracking of employment status
Kernan & Koegel (1984) (2½ years later)	48	Mildly retarded	46% (including homemaking)	Metropolitan (Los Angeles)	Longitudinal tracking of employment status
Lehtinen-Rogan & Hartman (1976)	91	Learning disabled	73% (including postsecondary school)	Suburban (USA)	Overall adjustment; students from a private school compared to general figures
Linden & Forness (1986)	40	Mildly mentally retarded with psychiatric disorders	62%	Metropolitan (Los Angeles)	Overall adjustment
Lurie, Schlan, & Freiberg (1932)	55	"Feebleminded"	70%	All	Overall adjustment

TABLE 4.1. *Continued*

Study	*N*	*Disability Group*	*Nonsheltered Employment Rate*	*Type of Region*	*Main Concerns*
Mathews (1922)	100	Institutionalized "subnormals"	78% (under supervision)	All (Massachusetts)	Program evaluation
McCormick & Clarke (1986)	142	All special education	48%	All (California)	Program evaluation
Mithaug, Horiuchi, & Fanning (1985)	234	All special education	69%	All (Colorado)	Overall adjustment, earnings; statewide sampling
Peterson & Smith (1960)	45	Educable mentally retarded	51-53%	Urban (Cedar Rapids, IA)	Comparison to nonhandicapped adults of low SES
Richardson & Hill (1980)	38	Mildly mentally retarded, seriously emotionally disturbed, orthopedic handicaps	82%	Urban	Program evaluation
Richardson & Krieger (1976)	92	Mild & moderate mental retardation, seriously emotionally disturbed, orthopedic handicaps, and other health impairments	63%	Urban	Rehabilitation center evaluation
Richardson & Krieger (1976) (2 years later)	92	Mild & moderate mental retardation, seriously emotionally disturbed, orthopedic handicaps, and other health impairments	43%	Urban	Rehabilitation center evaluation
Saenger (1957)	520	Trainable mentally retarded	23%	All (New York)	Overall adjustment
Semmel, Cosden, & Konopak (1985)	48	All special education	83% (including sheltered)	Metropolitan & urban (Southern CA)	Program evaluation
Stanfield (1973)	120	Trainable mentally retarded	5%	Metropolitan (Southern CA)	Overall adjustment, mobility and independent living skills
Thomson & Lucas (1981)	71	Deaf	77% (including post-secondary)	All (Illinois)	Outcomes of deaf college students
Tisdall (1958)	128	Trainable mentally retarded	2%	All (Illinois)	Outcomes of public school training programs
Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost (1982)	63	Moderately to severely handicapped	67%	Urban (Richmond, VA)	Retention, earnings, Program evaluation
Wehman, Kregel, & Seyfarth (1985)	125	Mildly to profoundly mentally retarded	26%	Urban, suburban, & rural (Virginia)	Comprehensive regional sampling, evaluation of services
Wehman, Seyfarth, & Kregel (1985)	117	Moderately to profoundly mentally retarded	67%	Urban, suburban, & rural (Virginia)	Comprehensive regional sampling, earnings
Zigmond & Thornton (1985)	27	Learning handicapped (graduates)	74%	Urban (Northeastern U.S.)	Employment outcomes of LD graduates
Zigmond & Thornton (1985)	33	Learning handicapped (dropouts)	44%	Urban (Northeastern U.S.)	Employment outcomes of LD dropouts

last column. Sources for each study can be located in the references. These, then, constitute the majority of studies conducted that measure the employment experiences of handicapped individuals in the United States.

Community Adjustment

Whether they are clearly articulated or merely implied, the factors identified in any follow-up study are an interpretation of values assumed or considered to be important to society. An apt description of this imbedded search for meaningfulness is given by Michael Rose (1985)

> The full range of a society's values relating to work . . . are projected in social institutions, structures, and practices; in organisational rules and operating procedures; in laws and legal decisions; and in social and economic policies. What occupations exist? Who enters them? What training do entrants get? What are their rewards—including their non-money rewards like prestige? How long is the working day, week, or year? What do laws about health, safety and fair treatment say and how vigilantly are they enforced?
>
> We habitually regard many such questions as purely technical or administrative. Yet their answers imply social values; and these latent values give the tissue of work culture as a whole its great intricacy. (pp. 127–128)

Thus, past studies should be read with regard for the value constraints of the time, and the theoretical commitments of the investigators. Even the most common global variable, *adjustment*, is value laden, implying a static norm that might be attained through some social service. Edgerton (1984) prefers the term *adaptation*, which he describes as "far less a measurable dependent variable than a multiplex process marked by change and contradiction" (p. 2). He makes a case for ethnographies that detail handicapped persons' actions and their perceptions of the society to which they are adapting. Adjustment, then, is a dependent variable whose parameters cannot be cursorily presumed.

As an example, Baller's (1936) follow-up study of mentally retarded adults was made in response to research practices that only identified those who were institutionalized and then proceeded to make generalizations about all retarded individuals. The doctrines of the time also unfairly linked retardation to criminal activity; this was a variable of concern to investigators as late as 1960 (Peterson & Smith, 1960). Baller himself chose to define adjustment as including those individuals who were wholly self-supporting and had no records of arrest.

Marriage by a retarded woman to a man of higher economic status signified community adjustment as well. "Better personal appearance and superior training in domestic responsibility" (p. 229) played a significant role in the upwardly mobile, "well-adjusted" marriages made by 21 women in the group. Such marital standards of adjustment were also common in other studies (Dinger, 1961; Fernald, 1919).

Yet when Hasazi, Gordon, Roe, Hull et al. (1985) showed that in Vermont, retarded female graduates worked only 23% of the time, while retarded males had an employment rate of 56%, they found these statistics to be troubling. Marriage was no longer acceptable as a successful outcome for a woman, and the figures for the nonhandicapped Vermont women supported this change. In 1984, 86%–88% of Vermont women aged 16 to 24 were employed. In fact, one other study recommended that "work placement programs . . . should also educate special education girls against the social tide that motivates them to limit their post-high school experiences" (Semmel, Cosden, & Konopak, 1985, p. 46). This major shift in values since Baller's time may only slightly affect the measurement of outcome studies. Marriage *per se* no longer qualifies as an indicator of adjustment, but homemaking is considered as a valid employment status (Dinger, 1961; Kernan & Koegel, 1984).

The above findings should be surprising to no one, yet should alert investigators to bias. For example, the goals of vocational training for persons with handicaps have been part of an overall movement toward mainstreaming, "normalization," and independent living. The position inferred by Stanfield's (1973) follow-up study is that vocational success for retarded adults often depends upon independence from the home, and that both of these ends are good and should be pursued. Yet, in a family whose culture has not affirmed independent living as a valued and desired outcome, fewer children—nonhandicapped and handicapped alike—move away from their parents. The most socially valid standard of "adjustment" might not be a generic criterion, but instead the status of a nonhandicapped sibling, or of a culturally similar peer. Special education and rehabilitative services must therefore face the difficult task of defining adjustment (or adaptation) fairly, and offering services that will facilitate it in such a way that respects diverse lifestyles and cultures.

Studies in the late 1950s and early 1960s measured community adjustment by asking participants, among other things, what television programs they watched and magazines they read, the number of times they violated the law, and whether they had or used credit (Dinger, 1961; Peterson & Smith, 1960). A study in the early seventies (Stanfield, 1973) emphasized questions concerning the amount of mobility that retarded individuals had in the community, and their ability to live independently of their family. More recent studies focused on the overall adjustment—occupational, social, and interpersonal—of diagnostically more specific populations: mentally retarded adults with a history of psychiatric disorders (Linden & Forness, 1986), deaf-blind individuals (Goros & Kowalski-Glickman, 1983), persons with epilepsy (Clemmons & Dodrill, 1983), deaf persons (Thomson & Lucas, 1981), or a group of mentally retarded adults stratified by IQ scores (Hill, Wehman, Hill & Goodall, 1985).

One investigation (Kaufman, 1984) posed a strong challenge to the working assumption of so many other studies that having *x* number of friends and visits with them is sufficient and necessary evidence of social adjustment (Linden & Forness, 1986; Mithaug, Horiuchi, & Fanning, 1985; Stanfield, 1973). Kaufman (1984) reported that having nonretarded friends was a "pressing need" according to the *parents* of retarded individuals. Yet her study presented evidence that experiences of contentment and loneliness were not correlated with whether individuals were solitary or had a wide circle of friends, or whether they had preferences for retarded or nonretarded people as friends. Though this study is not directly related to employment, it is an excellent example of some of the assumptions that often lie behind empirically stated standards of social behavior.

In actuality, many investigators consistently choose similar variables to measure: school completion and history, diagnosis of disability, employment retention and history, job profiles, job satisfaction, fringe benefits, earnings and economic self-sufficiency, marital status, and postsecondary training (Baller, 1936; Dinger, 1961; Edgar, 1987; Edgerton, 1984; Harnisch, Chaplin, Fisher, & Tu, 1986; Hasazi, Gordon, & Roe, 1985; Hasazi et al., 1985; Linden & Forness, 1986; Stanfield, 1973). In the conclusion to their review of the literature on the placement of retarded individuals in the community, McCarver and Craig (1974) note that post-institutional follow-up may become obsolete since the vast proportion of developmentally disabled persons are now living in the community. In fact, over 85,000 residents were released from public institutions for retarded persons between 1963 and 1970, at which point the focus of research was shifting to evaluation of programs in the community. Until that time, the criteria of successful adjustment were usually based only on whether or not the individual returned to an institutional setting (Madison, 1964). Using this criterion, McCarver and Craig (1974) found a median success rate of 74% when they considered the findings of 44 studies done between 1918 and 1970.

The literature since then reflects a research and advocacy shift that no longer accepts living in the community as sufficient. More recent studies oriented towards special education and rehabilitative services have emphasized the ability to survive without Social Security and Social Security Income (SSI) payments, and to contribute to the tax base (Brickey & Campbell, 1981; Wehman et al., 1982; Wehman, Seyfarth & Kregel, 1985).

Focus on such "bottom line" indictors is complemented by the Office of Special Education and Rehabilitation Services' (OSERS) policy statements of Will (1984) that emphasize employment. Halpern's (1985) call for community adjustment to include also residential environments and social and interpersonal networks necessitates studies that probe the interrelationships of employment and social life as perceived by the handicapped individual (Edgerton, 1967, 1984; Linden & Forness, 1986; Mithaug, Horiuchi, & Fanning, 1985).

Any study is limited by time and resources. Only so much data can be collected, and targeted populations will tolerate only so much inquiry. But if a study's purpose is clear, it can bring its efforts to bear on relevant questions. For example, there is the occasional study whose purpose is solely to describe (rather than predict) the lives of its participants. Robert Edgerton's *Cloak of Competence* (1967) is a classic of this genre (see also Edgerton, 1984; Jones, 1983). Studies of this type are critical because they provide investigators with a personal orientation to the population of interest, and may be an excellent resource for correlates and predictors.

In the late 1980s, parallel movements can be detected in follow-up studies. On the one hand are studies that focus on the training and cost-effectiveness of vocational services. The central question of these studies is whether handicapped youth are growing up to be taxpayers. Studies that concentrate their efforts on earnings, deductions, taxes paid, taxes spent on special services, worker's compensation, benefits, etc., will ultimately provide answers, predictions, and replicable results (McCormick & Clarke, 1986; Peterson & Smith, 1960; Wehman et al., 1982; Wehman, Kregel, & Seyfarth, 1985; Wehman, Seyfarth, & Kregel, 1985; Wehman & Hill, 1985).

Consumer satisfaction and the social validity of programs have been the concerns of other studies. In these cases, social validity requires investigation of the degree of socially significant goals, socially appropriate procedures, and socially important effects (Kazdin, 1977; Wolf, 1978). Such studies tend to see vocational outcomes as one important component of overall adjustment—the socially important effect—that is the central variable of interest (Lehtinen-Rogan & Hartman, 1976; Linden and Forness, 1986; Lurie, Schlan, & Freiberg, 1932; Mithaug et al., 1985; Saenger, 1957; Stanfield, 1973). Budgetary constraints of time and resources for research usually prevent one study from effectively addressing both social adjustment variables (consumer satisfaction or social validity) and employment outcomes. But to the extent that American culture identifies success and adjustment with income level, the outcomes of social and employment investigations will be complementary. A society such as Sweden's offers a contrast, where poverty and its concomitant lacks have been virtually eliminated. Here, employment may cease to be a reliable correlate of adjustment.

Finally, there is the majority of studies that focus more narrowly on vocational outcomes and efficacy of services, be they at the national, state, regional, local, institutional, or program level. They frequently do not investigate the cost of services and consumer satisfaction. In their review of follow-up studies, Harnisch et al. (1986) stated that "research needs to be conducted on specific programs and teaching strategies which lead to employment and advancement within the job setting for handicapped youth" (p. 50.). The public policy inferred by research that proceeds from this position is that (1) if a particular vocational service is associated with vocational success, it is worth the cost, and (2) if the targeted population is experiencing vocational success, that population is happy to be employed, or at least no more unhappy than the population at large. Though it will not be taken up here, valid arguments can be made for both assumptions.

The problem of many of these studies, as discussed by McCarver and Craig (1974), is the lack of an appropriate control group. Even if the target population does not achieve employment on par with the general population (the eventual control group), there is still a need to find out if particular intervention is at least better than none at all. Despite the ethical problems of withholding services, many public school districts are so poor in resources that it may actually be feasible to identify a matched sample to or construct control and experimental groups through random assignment. In the case of residential institutions, barriers to control group research on their released population persist; it is unclear who should compose an appropriate control group. Baller (1936), for example, compared 173 retarded individuals with IQ scores under 70 to a control group whose IQ scores ranged from 100 to 120. He did not control for socioeconomic status. Goldstein (1964) recommends matching to a "common and contemporary socio-physical milieu" (p. 243), and some studies have used this procedure (Peterson & Smith, 1960; Ross, Begab, Dondis, Giampiccolo, & Meyers, 1985).

Participants

In a comprehensive review of research conducted since 1975, Harnisch et al. (1986) cited studies in the 10 areas of handicap (defined by Public Law 94-142, 1975) and on disadvantaged youth. Of the 149 cited studies, 37% were done with retarded populations, 42% persons with sensory and orthopedic handicapping conditions combined, and 21% with learning disabled, severely emotionally disturbed, and disadvantaged combined. In reviews by McCarver and Craig (1974), Harnisch et al. (1986), and this chapter, no fewer than 236 follow-up studies of mentally retarded people are mentioned. Clearly, the most frequently observed population for transitional outcomes has been the mentally retarded adult. Mental retardation does represent the most prevalent handicap whose diagnosis is the least controversial. Learning disability is a more elusive and controversial construct (Sleeter, 1986; Ysseldyke, Algozzine, Shinn, & McGue, 1982), and people with learning disabilities were not recognized as a group in the United States until 1963. Thus, the high incidence rate of retardation, funding priorities, and the accessibility of mentally retarded populations to researchers may explain the preponderance of research on that population.

Few studies have investigated the socioeconomic status of the families of handicapped youth. One study from the early 1970s (Stanfield, 1973) noted that in a sample of 120 trainable mentally retarded youth, 42% of the graduates came from families whose average yearly incomes were less than $5,000, and the majority of these families were of ethnic minorities.

The study of mildly handicapped populations, who comprise over 80 percent of the special education population (Edgar & Hayden, 1985) has engendered research problems of its own. A search of ERIC and ECER/Exceptional Children data bases using descriptors such as "job placement," "career education," "vocational adjustment," "learning disabilities," and "emotional disturbance," produced only six citations of follow up studies or reports with follow-up statistics, but turned up 31 citations of program descriptions and reports with no follow-up statistics.

Horn, O'Donnell, and Vitulano (1983) reviewed 24 follow-up studies of learning disabled students, but differences in the professional perception of the handicap greatly affected the focus of the studies. For example, the major concerns of learning disability research are the duration of the disorder, basic skills achievement, and behavioral/emotional functioning. Since there is some speculation that learning disabilities are school based, and that people with learning disabilities "get better," there is less attention to their vocational outcomes. That is, if they get better, it is assumed that they have normal outcomes. However, most studies have reported that learning disabilities endure. Of the 24 studies reviewed, 10 did include measures of educational and vocational attainment, and 8 of those 10 reported average or better attainment levels for the majority of the learning disabled participants when compared to the general population. The review failed to find any correlations between "catching up" academically and vocational success, and the authors hypothesize that valid measures of self-concept and attributional styles may have better correlations with positive vocational outcomes.

The findings of this review must be considered in light of the serious problem of attrition among persons with mild handicaps. In his statewide follow-up of special education students from 11 Washington school districts, Edgar (1987) reported that 29% of all students who begin the ninth grade drop out. But among the students with learning disabilities and behavior disorders, the dropout rate is 42%. (Among special education students, excluding learning disabled and behavior disordered, the dropout rate is only 16%.) In their cross-categorical follow-up study, Mithaug et al. (1985) attribute the underrepresentation of the emotionally and behaviorally disturbed to the dropout phenomenon. Similarly, the Horn et al. (1983) review may have found equivalent levels of postsecondary vocational and educational attainment for learning disabled adults because the samples did not include dropouts from high school.

Zigmond and Thornton (1985) conducted a study that compared the outcomes of a learning disabled group (*n* = 60) with a control group (*n* = 61) of regular education students. An earlier study (Levin, Zigmond, & Birch, 1985) had shown learning disabled students (*N* = 52) dropping out at a higher rate (47%) than the school district average of 36%. Zigmond and Thornton (1985) showed an even greater disparity: dropout rates of 54% for the learning disabled group and 33% for the control group. The employment rate for learning disabled graduates was 74% and for the control group, 88% (not a statistically significant difference). The learning disabled and control group dropouts were also equally successful in finding employment (44% and 50% respectively), and significantly less so than those completing school. The study makes the very dramatic point that in this large, northeastern, urban school district, school completion was clearly a better predictor of employment than placement in a learning disability program. Furthermore, the authors point out that transition programs for special needs students cannot help students who are no longer in the educational system. For this population at least dropping out is the most disabling feature, and a learning disabled student is more likely to leave school before graduating. The study did not investigate the commonalities between the two groups of dropouts, or between the two groups of graduates.

Edgar (1987) intends to rectify this methodological effect—skewing of the sample due to attrition—by tracking students from seventh grade and thereby researching the moment of dropout. His study will spend more energy maintaining contact, and making more vigorous efforts to contact dropouts who are potential participants. But the task will not be easy. The conscientious attempts of his staff have succeeded in contacting 51% of the graduates, but only 20% of the dropouts.

There are certain implications from these data that need to be considered. The studies that follow up students with mild handicaps are based on those school leavers that the investigators are able to contact, and there is little doubt that a significant proportion of the mildly handicapped population is "missing." Edgar (1987) hypothesizes that "most dropouts come from multiproblem families that are more transient than the general population" (p. 557), and his assertions are supported elsewhere (Semmel et al., 1985). Horn et al. (1983) proposed subgroups of learning disabled students based on IQ, hyperactivity, and etiology, but investigation of the school-leaving process is clearly a variable most critical to follow-up studies at this time.

Geography and Era

The time and place in which studies are undertaken can provide a critical context for analysis, yet this consideration is infrequently considered in follow-up studies. For example, there are no records that report the treatment of retarded citizens before 1850. Goodfellow (1947) speculates that they were sent to jails and almshouses if they presented problems. The late-nineteenth-century institutions that set out to rehabilitate retarded individuals failed, creating a backlash to custodial care. Fernald's (1919) classic study revived the concept of adjustment, but the eugenics movement, which recommended sterilization of "defectives" and went counter to the idea, was also popular in the 1920s.

Baller's study (1936) recorded instances when participants from his sample applied for relief during the Great Depression. Learning disabilities, which were not discovered until the 1940s, and not represented by a professional organization until 1963, probably did not interfere so greatly with adjustment in the simpler, pre-World War II American society.

McCarver and Craig (1974) divided 44 representative studies of outcomes for retarded individuals into four chronological eras. They achieved a rough estimate of possible fluctuations in outcomes, with the highest success rate being during the period of 1936–1953. This may be explained by the demand for workers created by World War II, and by the waning popularity of eugenics. The lowest success rate was for the most recent period, 1960 to 1970; probably because the trend to institutionalize only those with the very lowest IQ's came into conflict with the increased complexity of society (Skaarbrevik, 1971). Deinstitutionalization has placed more people of lower functioning abilities in situations where it is more difficult to adapt. Most recently, the passage of laws mandating increased participation of handicapped individuals in the work culture has not yet stimulated significant increases in employment (Habeck, Galvid, Frey, Chadderden, & Tate, 1985).

In earlier times, retarded men were able to find work on farms or in manufacturing, and retarded women more frequently found domestic work (McCarver & Craig, 1974). As late as the 1950s, retarded individuals were likely to drop out of school by age 16 (Peterson & Smith, 1960), probably to assume such employment. Today, such individuals tend to stay in school until their 22nd birthday (Edgar, 1987).

Until recently, little thought was given to the types of jobs held by handicapped individuals. Baller (1936) noted that the industries of a particular region will influence employment. Another study (Wilson & Rasch, 1982) observed that of 53 psychiatrically handicapped individuals, the longest placements were of those who had a things-related (as opposed to people-, data-, or ideas-related) occupation. Hasazi, Gordon, Roe, Hull, Finck, and Salembier (1985) noted the effect of region when they reported that 18% of their sample from metropolitan areas held clerical jobs, while none of their rural participants did. Conversely, 38% of the rural participants worked in structural occupations, but none of those from the metropolitan areas did.

Semmel et al. (1985), in their evaluation of a statewide program to increase the employment of handicapped youths, chose their sample from four southern California areas. Initially it appeared from the summary statistics that program participants fared better in the job market than the comparison group; but the superior outcome was actually confined to only one of the four areas. When that area was removed from the sample, the program differences disappeared. It is not clear whether region, program implementation, or some other variable determined the difference.

Wehman, Seyfarth, and Kregel (1985) and Hasazi, Gordon, Roe, Hull, et al. (1985) chose samples that were spread out among metropolitan, urban, suburban, and rural environments, in an effort to make their research sensitive to different environments, and also to derive outcomes with implications for an entire state (Virginia and Vermont, respectively). The possibility of creating an analysis that employs a sophisticated interface between regionally specific economic conditions and the employment of handicapped persons has not yet been explored.

A variable specific to the individual—length of time in the community (deinstitutionalized)—is one that follow-up studies are beginning to measure (McCarver & Craig, 1974), in order to evaluate the effectiveness of institutionalization. Finally, Kernan and Koegel (1984), through their ethnography that probes the same population over time, offer us a methodology that allows sensitivity to external factors and to the individuals' development. This approach is taken up in the next section.

Methodological Considerations

One begins to appreciate the flaws of much of the cited research after reading Kernan and Koegel's (1984) fascinating and careful research on the employment experiences of mildly retarded adults in the Los Angeles area. Discrepant employment rates (cited in Table 4.1) and the paucity of conclusive findings on predictors begin to make sense when the actual employment experience is observed close up. As Cobb (1972) stated, there is no simple formula for the prediction of employment outcomes. While the commonly measured variables have some effect, their interaction is extremely complex, and make simple percentages seem crude and inadequate.

Kernan and Koegel (1984) examined a group of 48 individuals, aged 19 to 49, and identified as having the most to gain from services and the best prognosis for adjustment. They were studied over a period of 30 months, using a participant-observation methodology. The study tracked the job-seeking, getting, and retaining activities of the sample population. Kernan and Koegel (1984) derived seven categories or steps to describe employment status: competitive full-time employment, competitive part-time employment, housewife, workshop, actively seeking, sporadically seeking, and not seeking employment. Combining qualitative methodology with their data-gathering, they visited each of the 48 individuals in the study twice a month and tracked their movements from one category to another.

Seven individuals moved backwards an average of 2.78 steps over the course of the study, but 14 moved up an average of 3.0 steps, lending moderate support to the findings of increased capability and stability as the retarded person's time in the community increases (Cobb, 1972; McCarver & Craig, 1974). To present a complete picture, however, the investigators also report that 10 of the "no movement" group ($n = 27$) actually did move up and down the employment "ladder," but happened to be on the same step at the conclusion of the two-and-a-half-year study. Thus, over a 30-month period, their statistics do not reflect a single reading, but the fluctuations over time in employment status, as well as variations in each individual's situation (family support, program involvement, negative influences inhibiting employment, etc.). On a given date, the employment rate of the sample could range anywhere from 23% to 46%.

Outcome studies that furnish a single figure for a particular population, bound together only by a common label and placement, pale in comparison to this more intensive approach. For example, a workshop-to-competitive-employment program for health-impaired and multihandicapped individuals reported a very high placement rate (76%) of a sample ($n = 25$) who completed the program (Radar, Shapiro, & Rodin, 1978). However, the job retention rate was much lower, with further descriptive characteristics of the placements not reported in any detail. Many major adjustments take place when adults who have been served in a sheltered setting for a considerable duration first move to nonsheltered employment contexts. Transition and placement research needs to document these changes.

The Radar et al. (1978) study also illustrates the problems of participant selection. If all of the 34 persons who were contacted for participation were to be considered, the placement rate of 76% would be reduced to 56%. If all of the individuals initially referred and judged by the vocational service to be suitable for employment were to constitute the sample ($n = 44$), the rate of placement would be further reduced to 43%. Finally, of the 58 clients discussed by the project's staff, only 35% were employed at the time of the study. Thus, the issue remains as to what is the most appropriate criterion for job placement or retention. Kirchner and Peterson (1979), for example, reviewed national statistics of the employment outcomes of adults with visual impairments. The two sources for their brief, the Bureau of the Census and the National Center for Health Statistics, differed in their definitions of the population. But the most drastic impact of the statistics reported was made by the definition of whether or not a person was considered to be in the labor force. Job status as well as labor-force participation were determined by the self-perception of the interviewee. When considering those in the labor force, the employment rate of working-age persons with visual loss was 83% to 91%, at a time when the employment rate of the U.S. population was 93% (Kirchner & Peterson, 1979). This rate appears to be quite healthy until one considers that only 32% of all working-age persons with visual loss were in the labor force by the survey's definition: "All persons who had jobs or were looking for work" (p. 240). The criterion of labor-force participation is one that changes with every advance in the vocational education and rehabilitation field. Any professional's authority on such matters can be easily challenged (M. Dick, personal communication, August 1987). The question of to what degree the judgment of employability resides in the community, in the social service agencies, or in the individual still awaits a satisfactory answer.

Thus, quantitative studies may be useful to the extent that the reported indicators can identify a significant trend over time or validate a particular intervention. Otherwise, program development will benefit more from studies that give fuller portraits of the lives of unemployed and underemployed persons with handicaps. Such studies might not only indicate which interventions have an impact on employment status, but also identify the decisive issues for the population of concern. Problems in participant selection, for example Edgar's (1987) difficulties in contacting high school dropouts with mild handicaps, might be solved by qualitative studies that suggest more productive procedures for data-based follow-up studies. A coordinated effort that combines qualitative and quantitative research is clearly called for.

Absenteeism and social skills are also factors related to job retention for handicapped individuals and in need of ethnographic research (Edgar, 1987; Forte, Storey, & Gaylord-Ross, 1985; Mithaug et al., 1985; Wehman et al., 1982; Wehman, Kregel, & Seyfarth, 1985). The problem of widespread illiteracy (e.g., in California, 57% of the state's welfare recipients lack the basic skills to find and keep a job) ("Workfare Tests," 1987) presents the ultimate life-span task of educating hard-to-teach people.

A unique opportunity is afforded by efforts to evaluate Project WorkAbility, a statewide program designed to enhance the employability of special education students in California. Two different teams of investigators (McCormick & Clarke, 1986; Semmel et al., 1985) conducted studies and though they both employed a control-group approach, a comparison of their results points to some of the differential effects of methodology. Sample size and selection differed. Semmel et al.'s (1985) sample ($N = 109$) was rigorously matched to its comparison group, but lacked participation by minority individuals and overrepresented women (compared to the overall special education populations). McCormick and Clarke's (1986) sample was much larger ($N = 296$) and had about 40% minority individuals, but contained significantly more severely handicapped youths in the WorkAbility group than were present statewide. Semmel et al.'s (1985) study focused on gender and class-placement differences, while McCormick and Clarke (1986) found earnings and weeks employed to be the most significant factors. The statistical tests employed differed as Semmel et al.'s study conducted a series of chi-square and other single factor comparisons, while McCormick and Clarke employed a multiple regression analysis to identify factors that correlated most highly with the number of weeks employed.

There was corroboration on many findings: WorkAbility participants were identified as less dependent, and more likely to use placement agencies than handicapped peers (It is interesting that these same findings came from two different sources, teacher prediction [Semmel et al., 1985] and actual use of agencies [McCormick & Clarke, 1986]). Furthermore, both studies found that handicapped students most often worked in low-paying service occupations, and most frequently used the self-family-friend network to find jobs.

The studies' differences, however, indicate serious methodological issues. First, Semmel et al. (1985) reported an employment rate of 83% and McCormick and Clarke (1986) only 48%. Semmel et al.'s gender comparisons between a WorkAbility group and a non-WorkAbility group of special education students (matched on sex, special education placement, IQ, reading achievement, and primary language) showed a poorer outlook for young graduating women. McCormick and Clarke, however, adjusted the *expected* employment outcome, based upon how a nonhandicapped group of the same age, socioeconomic status, and race as the WorkAbility group could expect to fare in the job market, and presented a more optimistic prognosis for the women in their sample. The implications for service design thus differ significantly: Is the program intended to erase the effects of handicap only, or rather to serve the identified persons so that they might even exceed the expectations for their age, race, gender, and socioeconomic status? Which is the more appropriate evaluation criterion?

Finally, the studies differ in their assertions that WorkAbility participants are chosen for either lack (McCormick & Clarke, 1986) or likelihood (Semmel et al., 1985) of employability; this premise affects the bias of the evaluation, and the calculations of expected outcomes. Our point here is that most studies, if done within the bounds of conventional rigor, are rarely challenged to justify the appropriateness of their methods, or to describe the original condition precisely. This controversy is brought into clear relief by the differences between these two studies.

McCarver & Craig (1974) feel that the methodological problem in this research area lies in the fact that most follow-up studies are conducted post hoc, rather than being true experiments. Only one study since their review (Mertens & Seitz, 1982) made a direct comparison to a nonhandicapped cohort that was matched to a group of special education students. A more urgent need is the adoption of a standardized protocol for follow-up studies that would generate meta-analyses and more generalized conclusions. Procedures might include

1. Functional classifications of handicap sample (i.e., Edgar, 1987)
2. Definitions of stages of employment and success in the community: multiple probes (e.g., Kernan & Koegel, 1984)
3. Benefit-cost analysis (e.g., Hill, Hill, Wehman & Banks, 1985)
4. The effects of interagency agreements (e.g., Hasazi et al., 1985)
5. Measures of participant satisfaction and social validity (e.g., Edgerton, 1967, 1984; Edgerton & Langness, 1978; Forte, Storey, & Gaylord-Ross, 1985; Hobbs, 1983)
6. Earnings (e.g., Wehmen, Seyfarth & Kregel, 1985)
7. Adequate controls for economic factors.

The replication of such standardized studies would begin to provide the empirical base necessary to advocate for improvements in service delivery, and justification for a more proportionately diverse labor force. McCarver and Craig (1974) comment on the sad lack of standardized procedures, noting that between 1968 and 1973, over 39,000 retarded residents were released from institutions, but only 26% of the 34 states that responded to a survey had available data on the discharged clients' adjustment in the community

Critical Findings

This section will first review one influential study and then examine some of the more frequently substantiated findings in the follow-up literature of handicapped youth and adults.

A follow-up study conducted in Vermont in 1984 (Hasazi, Gordon, & Roe, 1985) provides a focus for identifying factors associated with employment status, and has implications for vocational programming. The study examined the employment status of 459 handicapped youths exiting nine Vermont public school districts between 1979 and 1983, and analyzed the relationships between their employment status and their manner of exit, gender, style of job search, location, school experiences, wages, and job histories. Of the sample, 59% graduated, 13% were over 18 when they left, and 28% dropped out of school before age 18; 66% were from resource rooms, 29% from special classes, and 6% from other programs.

The overall employment rate of the youths was 54%. The employment rate for students who had graduated was 60%, for those leaving after age 18, it was 51%, and for those dropping out, it was 30%. The highest employment rates were associated with youths who had kept part-time jobs during their high school years (70% employed of 114 youths), and those who had an unsubsidized summer job during high school (69% of 157 youths). The lowest employment rates were associated with those who left school after age 18 without graduating (30% of 33 youths) and those who had neither a subsidized nor an unsubsidized summer job during high school (37% of 114 youths). Of those students who could be clearly identified as mildly handicapped (Resource room students, $n = 187$), 62% were employed at the time of the study. Finally, of the 301 youths for whom employment data were obtained, only 166 or 55% were paid employees. Of this employed group, 84% found work, through the self-family-friend network; the remainder used more institutional means such as job-related service agencies, the military, or school personnel.

The authors comment that Vermont's vocational education programs are fully integrated. Handicapped students learn side by side with nonhandicapped peers. Participation in mainstreamed vocational education has a positive correlation with employment status (61% employed vs. 45%). These findings are in contrast to those of the National Longitudinal Survey, which found that vocational education is not correlated with higher employment rates in the general population (Borus, 1984). This suggests that special education students actually profit more than regular education students by having access to regular vocational education.

On the other hand, the majority of Vermont's "work experience" programs specifically designed for handicapped students are segregated, exploratory, subsidized (or volunteer), short in duration, and unrepresentative of real work settings. Perhaps these classes are composed of students who are lower functioning as well. The findings were that students who participated in work experience programs associated with special class programs were no more likely to be employed than those who did not participate.

By now, there is little debate over the fact that almost all handicapped youth, even when they are employed, earn well below the average income for their region and era. Peterson and Smith (1960) reported that 45 educable mentally retarded individuals earned only 61% of what a group of nonhandicapped adults of low socioeconomic status did. Mithaug et al. (1985) conducted a statewide follow-up of all special education students and found that 43% earned less than $3.00 per hour and 13% of them earned less than $4.00 per hour. Over 86% of 117 retarded individuals observed by Wehman, Seyfarth, & Kregel (1985) had earned less than $1,000 in the one to four years since they left secondary school. But when a group of 63 individuals who had had the benefits of an ongoing supported work program was probed (Wehman et al., 1982), the average client earned $4,464 per year (compared to the $414 per-year average for a workshop client). These figures seem impressive and do indicate progress, but Edgar (1987) states that any salary under $7,000 per year does not enable a person to live independently; thus the employment of special education youths at these levels is not significant.

Harnisch et al. (1986) reviewed numerous studies and noted that handicapped youths, besides earning at a marginal level, received fewer (if any) raises than nonhandicapped peers, and fewer if any fringe benefits (i.e., sick leave, vacation, insurance, profit sharing). In a study that showed almost three-fourths of 125 retarded adults to be earning less than $500 per month, the only salient fringe benefit observed by Wehman et al. (1985) was free meals. Other investigations have found the same low wages for handicapped individuals (Hasazi, Gordon, Roe, Hull, et al., 1985; McCormick & Clarke, 1986; Ross, Begab, Dondis, Giampiccolo, & Meyers, 1985; Wolfe, 1979).

Besides earning low wages, handicapped persons frequently find themselves in service-related and unskilled labor occupations (Dinger, 1961; Harnisch et al., 1986; Hasazi, Gordon, Roe, Hull, et al., 1985; McCormick & Clarke, 1986; Wehman, Kregel, & Seyfarth, 1985; Wehman, Seyfarth, & Kregel, 1985; Wolfe, 1979). Although Kirchner and Peterson (1979) reported that less than one-third of working-age, visually disabled persons were in the labor force, this is the one disability group that has been able to gain access to managerial, professional, technical, or official employment fields (Cook, 1976; Harnisch et al., 1986).

The next most common finding, and a more recent one, is that families and friends play a critical role in job development and placement. They have been the source of employment or an employment lead more often than placement agencies (Peterson & Smith, 1960; Wehman, Kregel, & Seyfarth, 1985). This kind of support includes the family that persists in organizing and supporting a job search, as well as the benefactor type of relationship where a friend gives ongoing, and perhaps on-the-job direction to a handicapped individual (Kernan & Koegel, 1984). Hasazi, Gordon, Roe, Hull, et al. (1985) found that as the environment became more rural, reliance on the self-family-friend network for a job increased. Figures on the use of the self-family-friend network for job development range from 59% (Dinger, 1961) to 68% (Richarson & Hill, 1980) to 84% (Hasazi, Gordon, Roe, Hull, et al., 1985) of those employed. One interesting and contrary finding by Mithaug et al. (1985) was that, in their statewide sample, the handicapped person himself—but definitely *not* the family—was responsible for finding employment. In fact, they concluded that the parents were the people *least* involved in the job search effort. Whether this difference is based on region, economy, or research methods is unknown at this time, and needs investigation.

Overall, these findings imply that the socioeconomic status of the handicapped individual's family is perhaps the best predictor of where and how successfully a youth will be placed in the work world. If the network is one of nonworking people, for example, it cannot be expected to supply a job for that individual. To take these implications a step further, services whose mission is better accomplished by the family and friends might shift their emphasis to improve the employment status of the network rather than the handicapped individual.

Two findings with more direct implications for educational services are that part-time, real jobs and summer jobs correlate with higher earnings and positive post-school employment outcomes (Hasazi, Gordon, Roe, Hull, et al., 1985; Semmel et al., 1985), and that vocational education classes are associated with employment success (Halpern, 1978; Hasazi, Gordon, Roe, Hull, et al., 1985; Mertens & Seitz, 1982; Rosenberg, 1978; Semmel et al., 1985). Further substantiation is especially critical in light of the fact that national surveys of vocational education's effectiveness have not found it to be correlated with higher than average employment when the general population is considered (Borus, 1984; Catterall & Stern, 1986; Flynn, 1982; Rumberger & Daymont, 1984). As mentioned before, if a truly valuable service is being performed by vocational education, namely, that it is making handicapped youth more employable, the significant aspects of that service need to be identified and retained. The aforementioned studies also show that vocational education is effective in reducing the number of dropouts in the general school population. Some would argue, however, that youths get access to vocational education only after the high-risk dropout ages (freshman and sophomore years in high school) have passed (N. Zigmond, personal communication, November 10, 1988).

Job status changes and reasons for job separation also require investigation; the findings could indicate the skills handicapped individuals need to retain jobs and thus redefine the training priorities of the service delivery system. Mithaug et al. (1985) found that their statewide sample (*N* = 234) had held an average of 3.1 jobs in the first three to four years after leaving school. One study of retarded adults reported an increase in job changes over time (Clark, Kivitz, & Rosen, 1968), while another found the opposite to be true (Kraus, 1972). Though employment for handicapped females is consistently reported to be more difficult than for males, Peterson and Smith (1960) observed retarded females holding onto their jobs for 33 to 38 months, while retarded males averaged only 18 months.

Wehman, Kregel, and Seyfarth (1985) present a number of reasons for job separations in their sample (*N* = 125) of retarded adults, ranging from problems with co-workers (8%) to disliking the work (7%) to transportation problems (4%) to loss of SSI payments (less than 1%). Another study (Wehman et al., 1982) found that only 11% of their sample of 63 retarded individuals resigned or were terminated due to an inability to perform job tasks at an acceptable rate. In a related study designed specifically[1] to study this topic, Hill, Wehman, Hill, and Goodall (1985) investigated over 107 job terminations. They developed seven categories covering client-related and environmental causes for separations and analyzed them in terms of the IQ levels of the retarded participants. The findings revealed that the more severely retarded individuals tended to lose jobs due to environmental causes (layoffs, family decisions, coworker discomfort), whereas the mildly retarded workers would more often be the "actors" in their terminations (attitude problems and skill deficits). Other data have been presented that support the hypotheses that retarded adults who are male (Tarjan, Dingman, Eyman, & Brown, 1960), or who have higher IQ scores (Baller, 1936; Hill, Hill, Wehman, Banks, Pendleton, & Britt, 1985) were more difficult to retain in employment. A larger economic factor may be involved here. The service-oriented jobs where retarded individuals usually work are appropriate for a more retarded person, but efforts to match higher functioning abilities to more challenging tasks have not been made available in the economy. The emphasis of the supported employment movement has not been to train more mildly handicapped persons for more complex jobs. Rather, its intent has been to prove the employability of even the most profoundly handicapped person.

Discussion

The issues raised by this body of literature intimate the near-impossible task of integrating the findings. It is far easier to identify the deficits of the literature than to condense and summarize the contributions. The varying methodologies, reflecting the varying purposes of investigators, create a temptation to discard all of the findings, or at least resist comparison. Single-figure statistics begin to look less and less useful when ethnographic studies and personal experience bring the true complexity of causes to mind. When none of the studies show employed handicapped people even approaching the poverty level, let alone exceeding it, the importance of the forty-odd studies enumerated in Table 4.1 seems negligible. Edgar (1987) reinforces this notion by commenting that nothing productive is being accomplished when only 18% of the special education students in this study (*N* = 360) earned more than the minimum wage, and only 5% when the learning disabled and behavior disordered persons were removed from the sample.

Yet something tugs at the mind as study after study is read and reviewed. Something is missing from the equation. That something is attention to those aspects of the economic structure that promote the underemployment of handicapped people. The role of special educators and rehabilitation professionals has been to make the handicapped student more employable. This task is obviously not yet completed, and it makes a certain sense that the literature focus on it. But underlying the rationale of most studies seems to be a naive belief, not articulated, but implied, that educational interventions and analyses of youths will perfect ways to employ handicapped persons, that through the manipulation of educational factors such as follow-up, vocational education, work experience, and so forth, low employment rates and low wages will disappear because we have developed good interventions. This notion is limited. The employment of handicapped youth commensurate with the rest of the population requires better training and placement services, to be sure, but the other half of the equation is the commitment of employers to create jobs that pay higher wages and offer better benefits.

This commitment is more the domain of public policy, but it affects the results of every study cited in this review. For example, suppose a program evaluation is being conducted, and the school or agency has made an informal agreement with a local company that the company will hire many of the youths exiting the program. If the management is compelled to adopt cost-cutting measures, and decides not only to terminate the agreement, but to lay off a number of the handicapped individuals, what might have been touted as an exemplary program would be quickly transformed into a failed effort. Thus, the actual processes and behaviors of the targeted employers must be fed into the equation of follow-up studies as well. Wehman, Seyfarth, and Kregel (1985) at least begin to address this issue by commenting on the economic health of Virginia at the time of their follow-up study. Brickey and Campbell (1981) discuss their program in terms of the economic needs of the time. But in the same way that Kernan and Koegel (1984) closely follow the lives of retarded adults, authentic explanations of employer behavior are the missing pieces of in-depth data that will bring significant change to the employment status of handicapped persons.

Nonetheless, findings up to this time are still significant. Adjustment, for example, has been reinterpreted to mean more than deinstitutionalization; competitive, nonsheltered employment is now considered essential. If the small gains made so far strengthen the arguments for enlarging opportunities and increasing wages, they have not been in vain. For this reason, Table 4.1 reflects an effort to include only studies for which a nonsheltered employment rate can be found. Thus, this present review presents data representative of a time when sheltered employment is not considered significant. Yet it is also a time when there is little to report in the way of earnings above the poverty level.

A review of the outcomes for the two most frequently studied populations reveals great disparity. For retarded individuals, nonsheltered employment rates of 2% (Tisdall, 1958), 12% (Delp & Lorenz, 1953), 19% (Baller, 1936), 43% (Hasazi, Gordon, Roe, Hull, et al., 1985), and 76% (Brickey & Campbell, 1981) can all be found in the literature. For mildly handicapped populations, the range extends from rates of 40% (Lehtinen & Tuomisto, 1978), 45% (Cordero, 1975), and 50% (Blalock, 1981) to 62% (Hasazi, Gordon, & Roe, 1985), 77% (White, Schumaker, Warner, Alley & Deshler, 1980), and 100% (Hardy, 1968). Surely, generalizations are difficult to make with any degree of certainty. These populations present special problems due to their numbers and the unique challenges of their disabilities.

The subject of disability category raises further issues in methodology: Should persons with mental retardation, for example, be investigated using the same methods as for those with mild handicaps? Edgar (1987) indicates that even the mechanics of contacting these two populations

must differ if they are to succeed. Hasazi et al. (1985) and Zigmond and Thornton (1985) concur on the hypothesis that visible handicaps preclude the importance of a diploma, while for the mildly, "invisibly" handicapped (who are more likely to drop out), high school graduation is given an exaggerated importance that works against their success in the job market. In another vein, the family situations that generally occur, the employment possibilities, and the interaction with different sets of factors (justice system, workshops, ethnic identity, learned helplessness, etc.), create social systems that may suit different research approaches. Finally, the close overlap between mildly handicapped youth and populations identified as poor, delinquent, and disadvantaged, calls for sharing of research literatures that has up to now only infrequently occurred (Phelps, 1986).

The final question posed by this review is the same as the first one considered: What is community adjustment? Wolfensberger (1972) makes the case for entitling retarded adults to full participation in community life. Defining that transition, be it in terms of income, personal satisfaction, or social integration, is no easy task. What are the levels of participation that can be measured as "full"? Who constitutes the norm for such standards? For example, a number of studies report on the fact that handicapped women are employed much less frequently and earn less than handicapped men (Dinger, 1961; Harnisch et al., 1986; Hasazi, Gordon, Roe, Hull, et al., 1985; Semmel et al., 1985), despite the fact that they show greater ability to hold on to a job (Peterson & Smith, 1960). Even allowing for parents' overprotectiveness of their daughters, the phenomenon tapped by these studies clearly extends beyond the handicapped community. The question becomes whether services should attain a status for handicapped persons beyond or merely on par with whatever other disadvantaged group to which they belong. This is the crux of one of the methodological differences between McCormick and Clarke's (1986) and Semmel et al.'s (1985) studies. Shall the progress of one group set the standards, or be allowed to impinge on the advancement of another? Ironically, it is the large-scale entry of women into the labor market (Rose, 1985; Habeck, Galvid, Frey, Chadderden, & Tate, 1985) that has possibly had the greatest negative impact on employment of handicapped persons over the last 14 years.

The goals of the rehabilitation movement, by defining adjustment in social, psychological, and vocational terms, are to effect that elusive "full participation." In other words, the ultimate refinement of services to handicapped persons may enable them to live *better* than their nonhandicapped peers! The one conclusive finding of the data—handicapped persons tend to be underemployed and poor—shows how far away this possibility is from reality. Yet if the dedication to service improvement defines a powerful enough movement in the coming decades, such an outcome would not be inconceivable. In fact, it is not untenable to propose a social system where the community adjustment of handicapped persons constitutes its basic premise, and the standard to which nonhandicapped individuals may strive.

SOCIAL SUPPORT IN THE WORK PLACE

The successful adjustment and integration of handicapped people in competitive settings depends on more than their job or social skills. Social support, in the form of relationships, contributes to employer acceptance and employee adjustment in times of a transition to a new job setting. In this respect social support is an important adjunct to the training of social skills. Studies indicate that social relationships contribute to the successful adjustment of handicapped individuals in both community and work settings (Close & Keating, 1988; Edgerton, 1967; Edgerton & Bercovici, 1976; Ross, Begab, Dondis, Giampiccolo, & Meyers, 1985).

Definitions

Social support may be defined as the formal and informal relationships that assist an individual in coping with stressful situations. This assistance can be both emotional and functional; often it is multifaceted, working towards increasing the fit between the individual and the ecological source of stress. This view reflects some of the salient points derived from definitions given by researchers in the field of mental health (Caplan & Killilea, 1976; Cobb, 1976; Gottlieb, 1983).

An epidemiologist, Cobb (1976) defines social support in terms of situational and environmental resources that provide a sharing of information. He states that informational aspects of social support fall into one or more of three areas, people's belief that they (1) are cared for, (2) are loved, esteemed and valued, and (3) belong to a network of communication and mutual obligation. Some of this information is obviously in the form of emotional support.

While Cobb (1976) stresses informational aspects of social support, Caplan (1976) stresses adaptive competence and cognitive aspects of stress mastery. From a social psychiatric perspective, Caplan defines social support as attachments among individuals or between individuals and groups that help to improve adaptive competence. This competence should apply to both short-term crises and life transitions, as well as with long-term challenges and stresses. Adaptive capabilities should arise from emotional mastery, guidance, and feedback gained from indigenous mutual-help groups and enhanced by helping professionals.

Gottlieb (1983) agrees with Caplan's (1976) definition and states that in addition to information, social support consists of tangible aid, or action offered by social intimates or inferred by their presence. Social support has beneficial emotional or behavioral effects on the recipient. Gottlieb also affirms Caplan's belief that professionals can play a leading role in mobilizing support from more informal, indigenous sources.

All three definitions share the common concept of enhanced mental well-being through social relationships that allow an individual to adapt to stressful situations and develop coping strategies. However, the definitions lead to different types of research. Research using Cobb's (1976) definition would stress proving information and encouragement within a given ecological setting. On the other hand, Caplan's (1976) and Gottlieb's (1983) definitions would also include active aid such as making phone calls, contacts, and monitoring to enhance adaptation to stressful settings.

Caplan's (1976) and Gottlieb's (1983) definitions amplify Cobb's (1976) definition by stressing different functional aspects of how social support works in the life of the recipient. They advocate using preexisting support groups, and stress ways that professionals can enhance and encourage indigenous aid to groups on behalf of people undergoing transitions and stresses.

In recent years social support has also emerged as an important concept that can contribute to the successful transitions of handicapped individuals in community and employment settings (Chadsey-Rusch & Rusch, 1988; Karan & Knight, 1986; O'Connor, 1983; Shafer, 1986). O'Connor (1983) defines social support for mentally retarded persons in a way consistent with mental health definitions. She states that support consists of "emotional, informational, and material support provided by friends, relatives, neighbors, service providers, and others with whom one has an ongoing relationship, and to whom one can turn in times of need or crisis" (p. 187). Interestingly, all of these definitions stress the promotion of well-being through relationships rather than developing new skills in order to adapt to a situation.

Since relationships depend on mutuality and working together, an ecologically realistic view of social support becomes important. Such a view is consistent with Cobb's (1976) definition and, in the case of vocational education for handicapped persons, can be enhanced by the action-oriented definitions of Caplan (1976) and Gottlieb (1983), because it is often professionals who take action to encourage a good ecological match for the client.

This ecological perspective has been advocated by a number of authors in the mental health and vocational education fields (Hirsch, 1981; Chadsey-Rusch & Rusch, 1988). These authors stress that the success of social support or the retention of employees depends on a good match between individuals and their environment. Hirsch (1981) states that healthy ecological formulations consist of goodness of fit that permits individuals to participate actively in viable segments of society. Chadsey-Rusch and Rusch (1988) emphasize that the workplace should strive to maximize the physical, social, and organizational fit or congruence between persons with special needs and their workplaces.

If the issues of goodness of fit are ignored, then potentially adverse consequences may follow. Among the negative consequences for a mismatch between person and environment are a subversion of the regimen, and an undermining of a person's self-esteem. This undermining occurs if people believe that their status is that of an impaired person. They may consequently see themselves as a burden or become socially detached to avoid the stigma.

Conversely, Karan and Knight (1986) contend that employment retention occurs where matches have been reasonable to good, and where environments have provided sufficient support to help individuals meet the demands of the workplace. This combination of a match and support offers an effective model for transition, since success in the workplace depends on the mutual satisfaction of employers and the employees. Social support should arise from a good ecological match and emphasize action-oriented support in order to promote successful employment transitions.

Reviews of Current Studies

Numerous studies have examined social support in the mental health field in a wide variety of circumstances, such as community residents experiencing pregnancy, health problems, divorce, unemployment, and death in the family (Gottlieb, 1983). However, social support is a relatively new field for handicapped people with special needs. Romer and Heller (1983) examined social support for handicapped individuals in community settings, but few studies have examined the supportive relationships that handicapped individuals experience when making a transition to nonsheltered, competitive employment.

Much of the empirical research on social development for handicapped persons in the workplace has stressed social skills training. More currently, the building of social support networks in the workplace has been advocated by a number of authors, many of whom offer theories and strategies to best implement and utilize social support systems. Despite the expansion of theory beyond skills training to include a person-workplace fit, very little empirical research has been generated in this field (Karan & Knight, 1986; O'Connor, 1983; Shafer, 1986).

Analogous empirical work done in the mental health field examines the buffering effects of social support on work stress (House & Wells, 1978; LaRocco, House, & French, 1980; LaRocco & Jones, 1978). The study by LaRocco et al. (1980) will be examined here as an example of how mental health research has demonstrated that social support can have a positive impact on individuals experiencing occupational stress. There is obvious relevance to research and theory regarding employees with handicaps, and this research may be useful as a model for data collection. Results of other research that examines handicapped individuals in vocational settings will also be examined here, even when social support is reported as a secondary concern. This research indicates an emerging concern with social support as a preventive intervention to facilitate a successful transition in a vocational setting.

In a mental health article on social support, LaRocco et al. (1980) explore the impact of social support on occupational stress and its relation to job-related strain and health. This article does not address handicapped individuals, but it is a well-designed empirical study. It shows that social support acts as a buffer on the impact of job stress on several mental and physical health variables including anxiety, depression, irritation, and somatic symptoms. The article demonstrates a conceptual and empirical basis for examining the effects of social support relative to life stress and individual well-being.

LaRocco et al. (1980) use a statistical regression technique to analyze data from an occupationally stratified random sample of 636 men drawn from 23 different blue-collar and white-collar occupations. Measures included perceived job stress, person-environment fit, job-related strain, and general mental health. Social support measures examined perceived support from three sources: supervisors, co-workers, and family and friends.

LaRocco et al. (1980) examined the data in terms of both main effect (additive) and interactive effect (buffering) hypotheses. The interaction findings indicated no significant relation between social support and the impact of job stress on the subjects' general attitude and affect regarding work. Social support did not ameliorate feelings of job dissatisfaction, boredom, and workload dissatisfaction. However, it was found that social support had a significant impact on the relationship between job stress and health. Of four dependent health variables, three had significant effects: Depression, irritation, and somatic complaints had been buffered by social support, while the effects on anxiety were not significant. In sum, the results indicated that social support buffered the effects of job stress on overall mental health, but did not buffer the effects on the subject's attitudes toward work.

In a further examination of the data, the authors found that of the three sources of support, the co-workers produced about twice as many effects as supervisors or friends and family. The results also indicate that in many cases the effects of social support on mental health were more beneficial when stress or strain was high. At these high levels support made a difference of 1.5 to 2.5 standard deviations in the level of the mental health variable.

These findings verify the role of social support in the mitigation of the effects on job stress on various psychological factors. While this study does not address social support questions in relation to handicapped individuals in vocational settings, the study does demonstrate that social support has complex components, and does not offer all-encompassing answers to social problems. Whether social support has beneficial effects on mental health and coping for others besides those experiencing stress remains an unanswered question. The study also emphasizes the need to specify which stress/strain relationships are most susceptible to buffering effects, and which are relatively impervious to social support.

Findings on the social support of handicapped individuals in competitive employment settings are rare. A few studies of handicapped people employed in noncompetitive settings indicate that social support from their peers is important to their emotional well-being. The absence of peer support detracted from their feelings of self-satisfaction. Close and Keating (1988) stated that recent studies have shown that handicapped persons in competitive employment often felt less support than those in sheltered workshops. These individuals felt alone and detached from the social network provided by their agency supervisors and peers in the sheltered settings. Such studies raise an important question about the best method for assuring person-environment fit. These studies, however, should not be taken to mean that sheltered workshops are better. Rather, they should show the need to attend to creating better social support systems for individuals in competitive settings.

In another study Brickey, Browning, and Campbell (1982) examined the placement histories of 73 mentally retarded, sheltered workshop employees who made a transition to less restrictive positions with either Projects with Industry (PWI) or to competitive employment. Of the 73 placements, 27 were PWI positions, which included work at a book bindery, helping to make patio stones for a garden store, factory work, and janitorial work. Of these 27, 13 (48%) went on to competitive jobs, making a total of 58 placements, which included dishwashing, janitorial, food service, and factory jobs.

The authors were primarily interested in studying the work histories

of these employees. However, their discussion on group placements prove to be interesting for several reasons. They state that the most successful (longest term) placements were with McDonald's outlets. In these positions the mean record was 17.5 months per employee, which compared favorably to a mean of 7.2 months per employee in other food-service positions. The authors believed the amount of support was substantially increased because training staff studied the jobs in more detail and were better able to prepare the groups. The authors also cite support from the regional and unit leadership of the outlets. The authors state that group placements may be more productive for retarded people than individual placements with a variety of employers. In this instance group placements appear to offer more support and have more success as measured by more stable job placements.

Two other studies on social skills training indicate a growing trend toward linking formal and informal support systems (Rusch & Menchetti, 1981; Shafer, Brooke, & Wehman, 1985). While both of these studies stress the development of specific social skills rather than continuing support, they offer examples of how professional trainers can utilize the support of co-workers as well. In this way the indigenous co-workers can offer social validation to professional programs so that performance within a client's repertoire can be brought into a better ecological match with situational demands.

In the study by Rusch and Menchetti (1981) the social skills training for a competitively employed, moderately retarded male, Jim, was effectively carried out by professional follow-up staff in conjunction with his supervisors and co-workers. The staff trained Jim to comply with his fellow workers and warned him that failure to comply would result in his being sent home. The staff relied on reports from Jim's fellow workers to chart Jim's progress, and it was a supervisor who sent Jim home for noncompliance. This latter action resulted in Jim's compliance with supervisors, cooks, and laborers for the remainder of the study.

In another study also cited above, Shafer et al. (1985) examined the effects of modeling, role-play, and response feedback in developing appropriate social interpersonal skills in a mentally retarded worker. An important aspect of the study was its stress on using the supervisor to socially validate the study and extend the support from the vocational trainer to on-site support people. The supervisor identified three areas for social improvement: the development of appropriate skills for accepting criticism, humor, and requests for assistance.

The study achieved its primary purpose of demonstrating that effective strategies can be applied in competitive work settings. However, the lowered effectiveness scores on the employer probes indicate that professionals need to incorporate others into treatment plans to help assure generalization and greater congruency with the employment setting. Both of the social skills training studies indicate that indigenous personnel can work effectively with vocational trainers to create more socially valid treatments. The treatments effectively taught social skills but did not specifically address the subjects' social link to others in the work environment. Social skills training does address the employee's needed skills for job retention. But if such training had been coupled more directly with social support by encouraging relationships in the work environment, perhaps even greater generalization would have ensued. Social skills training is probably an important first step for employee acceptance, but the mutuality offered through social support goes beyond skills.

Future Directions

Social support is a relatively new topic in the field of mental health, and is even newer to the field of special education. Except for some research dealing with the placement of persons with handicaps in community settings, theory has not advanced beyond confirmatory empirical research. Social support research as it applies to persons with handicaps is urgently needed if the field is to become a viable model for transition.

Future research needs to focus on the goodness-of-fit between people and their environments, and stress the interrelationships that occur therein. Skills training puts the onus of social acceptability on the handicapped person. On the other hand, social support stresses a receptive emotional environment where supervisors, co-workers, and new employees all strive to achieve a conducive work environment.

Further investigation might examine a number of related issues. Case studies, program evaluation research, and outcome studies could examine employment longevity and satisfaction. Issues related to longevity and satisfaction should include the composition of support networks, and look at whether naturally occurring support systems offer more emotional support for mental well-being than do those artificially created by a trainer or professional within a work environment. Methods for successfully linking professional and nonprofessional networks should also be examined. Other methods to be developed would be those that promote reciprocity in relationships as opposed to ones in which the clients feel that they have nothing to offer.

Another area for research would be to examine whether peers or professionals offer more socially valid support, and if the two groups can offer comprehensive services rather than fragmented services. Combined efforts offer the advantage of promoting a more efficient support, one which recognizes the whole person in an ecological context.

Social support is an important area for future research because it addresses the client's needs as well as the employment demands. However, without further empirical findings to support the current theories, the field will not grow. New research should provide a perspective and direction, developing a structure for providing mutual support and a stable environment for employers and employees adjusting to the stresses of new settings.

GENERALIZATION TRAINING

The growing emphasis on preparing students with skills to function as independently as possible across a wide variety of domestic, community, recreational/leisure, and vocational domains has heightened the need for students to learn these skills not only in specific teaching situations, but to be able to generalize them across appropriate non-trained environments, people, and activities as well. It is no longer sufficient that a student correctly perform learned skills only in the training environment. Several authors have suggested that the utility of most functional skills is determined by the successful performance of the skill across non-trained natural situations (Coon, Volgelsberg, & Williams, 1981; Falvey, Brown, Lyon, Baumbart, & Schroeder, 1980). As Baumeister (1969) stated: "It is one thing to show that well defined response sequences can be shaped in a highly structured, controlled, and atypical environment and quite another matter to demonstrate that conditioning can produce permanent adaptive changes in complex areas of adjustment over a wide variety of environmental circumstances" (p. 50). It is widely recognized that generalization of learned skills with severely disabled children does not occur automatically, but that it is necessary to build procedures directly into the instructional program in order to ensure its occurrence (Rusch & Schutz, 1981; Stokes & Baer, 1977).

Generalization has generally been viewed as a passive phenomena instead of a specific outcome of training. Stokes and Baer (1977), in their review of the literature, demonstrated the extent to which this passive perspective has carried over into teaching practices. The majority of the research reviewed used a "train and hope" method (i.e., a skill was trained and the occurrence of any generalized effect was assessed but not specifically programmed). Most studies employing this approach failed to achieve expected levels of generalization.

Stokes and Baer (1977) defined generalization as the "occurrence of relevant behavior under different, non-training conditions (i.e., across subjects, settings, people, behaviors, and/or time) without the scheduling of the same events in those conditions as had been scheduled in the training conditions" (p. 350). Advances in instructional technology have facilitated the teaching of responses that are performed in novel (non-trained) situations (Drabman, Hammer, & Rosenbaum, 1979; Saunders & James, 1983; Stokes & Baer, 1977). While a complete technology is not presently available, several generalization strategies are proving to be effective.

Training Functional Skills

The participation and integration of individuals with disabilities is dependent upon their competence in a variety of skill areas across a variety of present and probable future environments (Brown, Nietupski, & Hamre-Nietupski, 1976; Wilcox & Bellamy, 1982). Given the difficulty many individuals with severe disabilities encounter in learning new skills, efficient and effective use of instructional time is of critical concern. Thus, training time should not be squandered on nonfunctional or irrelevant tasks that do not generalize to targeted community settings. Instead, skills trained should be those that are valued and that produce naturally available reinforcers in the environment. In the context of generalization, training functional skills increases the likelihood that an individual will use these skills to gain access to naturally reinforcing contingencies that are routinely available in natural settings (Stokes & Baer, 1977). For example, teaching an individual to operate a vending machine at a job site is a functional skill since it allows the individual to have access to desirable items (e.g., soft drinks, food) in that environment. Further, by determining the demands of the targeted natural settings where an individual would be expected to perform, and then training the relevant skills, we would increase the probability of that individual receiving reinforcement (e.g., money, break-time, social praise), and thus refining and maintaining those skills without continued interventions.

Training in the Natural Environment

As the content of instruction becomes increasingly focused on teaching functional skills, the context of instruction is being given greater significance. One hypothesis offered for why generalization often fails to occur is that the training environment is unlike the environment in which generalized responding is expected (Stokes & Baer, 1977). Either it lacks the relevant stimulus variables to ensure generalized and adaptive responding, or it contains irrelevant stimuli that may come to be associated with responding. Thus, a number of authors have suggested that teaching that occurs exclusively in the classroom, or exclusively involves simulation activities, is inadequate for disabled individuals who are expected to ultimately function in a wide variety of community settings (Brown et al., 1976; Certo, Brown, Belmore & Crowner, 1977; Sailor & Guess, 1983).

Consequently, it has been advocated that there is a need to provide functional skills training in the natural environments where the skills are ultimately to be performed (Brown et al., 1976). However, others have suggested that training in natural environments may not be the most effective or efficient approach (Giangreco, 1983; Neef, Iwata, & Page, 1978; Nietupski, Welch, & Wacker, 1983; Page, Iwata, & Neef, 1976). In addition, teaching that combines simulation activities with regular training in natural contexts has also been recommended as an effective approach for developing generalized skills (Gaylord-Ross, Haring, Breen, & Pitts-Conway, 1984; McDonnell & Horner, 1985). Unfortunately, evidence is insufficient regarding the superiority of any of these instructional approaches or how experiences in one should relate to the other. In general, research suggests that both simulated and natural environments can be used effectively (Mithaug, 1981). However, until an individual can demonstrate correct performance in the targeted natural setting, training cannot be considered a success. What is needed now are specific guidelines to assist in determining which instructional approaches are the most effective and efficient for various populations and stimulus conditions.

Training the General Case

Two strategies suggested by Stokes and Baer (1977) closely correspond with general case programming (i.e., programming common stimuli and training a sufficient number of exemplars). General case programming emphasizes the role of stimulus control in designing and implementing instructional programs for teaching generalized responding. According to Becker and Engelmann (1978), a general case has been taught when, after teaching some members of a set of activities, a student will respond correctly to any member within that set. This method was originally developed to teach academic and social skills to mildly handicapped and culturally disadvantaged children (Becker, Engelmann, & Thomas, 1975), and later extended for use with severely handicapped students to teach vocational, community living, and self-help skills (Horner & McDonald, 1982; McDonnell, Horner, & Williams, 1984; Pancsofar & Bates, 1985; Sprague & Horner, 1984).

Horner, Sprague, and Wilcox (1982) characterize general case programming as "those behaviors performed by a teacher or trainer that increase the probability that skills learned in one training setting will be successfully performed with different target stimuli, and/or in different settings, from those used during training" (p. 63). The general case approach provides specific recommendations regarding the development of the precise generalized performance demands expected in natural settings. The procedures in this approach have been translated into six steps:

1. Define the instructional universe by identifying all stimulus conditions in which the student will be expected to perform
2. Define the range of relevant stimulus and response variations within the instructional universe
3. Select appropriate examples from the instructional universe to use for teaching and probe testing
4. Sequence the teaching examples
5. Teach the examples
6. Test with non-trained examples and/or settings

Recently Horner, Eberhard, and Sheehan (1986) utilized a general case approach to examine the effects of using positive and negative training examples to minimize inappropriate generalization. In this study, four students labelled as moderately and severely mentally retarded were taught to bus tables in different cafeteria settings. The primary dependent variable was percentage of tables bussed correctly across a set of 15 nontrained tables systematically selected to sample the range of different stimulus-and-response variations for table bussing in cafeteria settings. A multiple-baseline design was utilized in which each participant received baseline assessment, training, and general case instruction. During the training phase teaching examples were used that systematically sampled the types of stimulus conditions the students were expected to encounter after training. Both positive training examples (tables to be bussed) and negative training examples (tables not to be bussed) were presented within each training session. During the general case phase, daily training sessions continued to occur. During each phase, probe sessions were conducted on 15 different table situations. The results indicated that after receiving instruction that followed the general case guidelines, the students correctly bussed and correctly rejected nontrained probe tables. The results of this study suggest the value of selecting training examples that sample the range of variability within the response set and the inclusion of a dependent variable that assesses inappropriate generalization. It would appear that general case programming offers an approach to developing generalized skills that is effective, efficient and functional for individuals with severe disabilities.

Summary

The strategies presented above are meant to be representative of some of the options available when training for generalized responding. While these approaches can by no means be considered exhaustive, they do represent significant contributions toward the goal of generalized performance. The selection of a particular technique would be dependent upon several factors. These include the specific skills to be learned in the natural setting(s) and/or situations in which performance is expected, and the discrepancies between an individual's present level of functioning and the response demands required of any particular strategy. At present, an effective generalization technology is not available to assist in evaluating the effects of combining the various strategies. Rules are needed regarding optimal strategies and procedures for combining the various approaches for particular types of generalization.

SOCIAL SKILLS TRAINING

Recently, as many disabled persons obtain employment in competitive work environments, the issue of maintaining their employment over time has begun to receive attention. Studies have reported that mentally retarded workers are experiencing nonvocational problems in work settings that may lead to unsuccessful employment (Brickey, Browning, & Campbell, 1982; Cheney & Foss, 1984; Edgerton & Bercovici, 1976; Ford, Dineen, & Hall, 1984; Foss & Bostwick, 1981; Greenspan & Shoultz, 1981; Kochany & Keller, 1981; Wehman et al., 1982). Although both production skills performed at certain criteria levels and effective social skills appear to be necessary for employment maintenance, there is ample evidence that most job terminations are due to lack of appropriate social skills rather than to actual work performance (Chadsey-Rusch, 1986; Gold, 1975; Greenspan & Shoultz, 1981; Kochany & Keller, 1981; Schalock & Harper, 1978). Yet, despite its actual impact upon job maintenance, social skills training in work settings has failed to receive anything near sufficient attention.

Social skills training, as mentioned before, serves several purposes. To begin with, it helps disabled persons become better prepared for entry into nonsheltered work environments. It has been found that employers value appropriate social skills when hiring disabled employees. Rusch, Schutz, and Agran (1982) conducted a survey with 120 potential competitive employers and found that a considerable portion of the survival skills necessary for entry into competitive employment consisted of social survival skills (e.g., following directions). Also, certain jobs seem to require more and better social behaviors than others. Salzberg, Agran, and Lignugaris/Kraft (1985) found that social behaviors were deemed more important for kitchen helpers and food service workers than for janitors, dishwashers, and maids for the reason that some jobs (e.g., kitchen helpers) take place in a social context where workers frequently interact with co-workers and customers. Here, persons with the appropriate social skills are more likely to be hired in competitive work environments than those with inappropriate social behaviors. Survey studies like these, which identify critical behaviors for employees, may be called *social competence investigations*.

Second, social skills training for disabled workers increases the probability of maintaining employment in competitive work settings. Even though no study has been conducted to find a specific correlation between the demonstration of appropriate social skills and job retention, the following studies have found the listed social behaviors to be related to job termination:

1. Greenspan & Shoultz (1981)—lack of social awareness, e.g., walking into a meeting
2. Kochany & Keller (1981)—complaining, destroying property, interacting inappropriately with supervisors
3. Wehman et al. (1982)—noncompliance with supervisors' directives, failure to notify an employer, and bizarre and/or aggressive behavior
4. Brickey et al. (1982)—poor relations with peers
5. Ford et al. (1984)—poor interactions with co-workers
6. Cheney and Foss (1984)—not accepting criticism, failure to request assistance, and failure to follow instructions

Third, social skills training helps disabled workers establish a positive social support network with co-workers and/or supervisors. When disabled workers establish positive social interpersonal relationships with co-workers and/or supervisors, they have a support group or an individual to whom they can turn in time of need. Co-workers and/or supervisors can serve as advocates for disabled workers, which in turn increases the probability of the maintenance of employment. In addition, the formation of a social network can contribute to the overall quality of life of the disabled individual (Edgerton, 1967; Edgerton & Bercovici, 1976; Landesman-Dwyer & Berkson, 1983; Weiss, 1974).

With the realization of the importance of social skills training, professionals have recently begun to concentrate on social skills intervention in work settings. Unfortunately, social competence studies, which had identified valued and unvalued social behaviors in work settings, were not utilized in selecting target behaviors for the social intervention studies. This points to the limited generalizability of the social competence studies; that is, the social competence studies failed to answer the key questions related to social skills training: *how* and *what* to assess and teach. This failure had several causes:

First, each study employed a different system for categorizing social behaviors, making it difficult to be conclusive about the social behaviors basic to various employment settings. Second, except for a 1987 study by Salzberg, McConaughy, Lignugaris/Kraft, Agran, and Stowitschek, none of the research identified specific social behaviors pertinent to certain types of jobs. This does not allow practitioners to prepare disabled individuals appropriately for entering specific jobs (e.g., better conversational skills are needed for kitchen helper). Third, the majority of the categories of social behaviors are so broadly stated as to be unusable for effective assessment and intervention. There is a great need for the development of a social skills model that can suggest a uniform way of defining, categorizing, and assessing social behaviors (Chadsey-Rusch, 1986). Without such uniformity, it becomes very difficult to synthesize, compare, or generalize in this area. McFall's (1982) framework for social competence is proposed as an initial solution by Chadsey-Rusch (1986).

Target behaviors for social intervention studies have not been validated by co-workers or supervisors in most studies. The following section reviews studies on social skills intervention in work settings with mentally retarded workers.

Intervention Strategies

Training packages. The majority of the studies in social skills training with mentally retarded persons have used all or part of social skills training packages. The packages have had the following components: rationale, modeling, behavior rehearsal or role-play, and feedback. Most studies implemented these packages in natural settings, although there is a line of research that used these packages in analogue settings.

Rusch and Menchetti (1981) utilized the portions of a social skills training package that involved instruction and practice in order to teach compliance behavior to one moderately mentally retarded male employed as a kitchen laborer in a university dormitory in Illinois. The employee was given instructions on how to follow requests by either supervisors or professional kitchen laborers. He was instructed to (1) immediately stop what he was doing when asked by a co-worker (supervisor or kitchen laborer) to perform a job, (2) say, "ok" or "yes" in a friendly voice, to acknowledge that he heard the request, (3) perform the task correctly, and finally (4) return to the original job when completed. He was also provided an opportunity to practice these responses verbally. In addition to the practice, warning was given to the employee that if he failed to comply with the supervisors or professional kitchen laborers, he would be sent home by the shift supervisors. A multiple-baseline design across persons (supervisors, kitchen laborers, cooks) was used to assess treatment effectiveness. Data on the participant's compliance behavior were collected by having supervisors, professional kitchen laborers, and cooks answer the appropriate questions regarding his compliance throughout the day: (1) Did the employee help? (2) Did the employee sigh, complain, or grimace? (3) Did the employee help or respond within five seconds? (4) Were you happy with the employee's answer? (5) Did the employee do the task correctly, independently, and return to the scheduled task? The study indicated that providing instructions, practice, and warning was effective in increasing compliant responding across supervisors and professional kitchen laborers. Of particular interest was the generalized treatment effect that occurred not only with supervisors and professional kitchen laborers but also with a third, nontreated group: cooks. That is, the participant became compliant to cooks, for whom treatment was never associated, as well as to supervisors and professional kitchen laborers for whom treatment was introduced. This study makes a significant contribution to vocational training literature by showing the effectiveness of including co-workers (e.g., professional kitchen workers and cooks) and supervisors in identifying the targeted behavior, delivering the consequences, and evaluating performance during the intervention period.

In a recent study, Chadsey-Rusch, Karlan, Riva, and Rusch (1984) used a social skills training package (consisting of rationale, modeling, role-playing, and practice) plus verbal prompts (A trainer said, "It's your turn to ask me a question.") to increase the frequency of question-asking appropriate to a conversational context. Three adult males who were moderately mentally retarded and competitively employed as kitchen laborers participated in this study. All the training was conducted in an analogue setting arranged in a university dormitory dining hall where all employees took their breaks. The data were collected via tape-recorded, structured conversations with the same female trainer across all participants. The results of the study indicated that the training procedure increased the conversational ability of the three retarded men when they interacted with a group of four community members (two lawyers, one plumber, and one laborer). However, generalization effects were not measured with coworkers in the natural setting.

Bates (1980) used a social skills training package consisting of verbal instruction, modeling, role-playing, feedback, contingent incentives, and homework in teaching four interpersonal skills (small talk, asking for help, differing with others, and handling criticism) to 16 mildly and moderately retarded adults. In his study, a typical behavior analytic method (based on the prior work of Goldfried and D'Zurilla, 1969) was used to generate role-play situations. These situations and responses were solicited from group home parents, retarded adults, vocational supervisors, and assertiveness training leaders. Performance measures on eight role-playing situations were taken once a week after the training; data on untrained role-playing situations were taken prior to and after the study. All training was conducted in analogue settings (residential settings). Role-play was done in an office, and generalization assessment was done at a local grocery store. The results from this study indicated that experimental groups (eight participants) provided with social skills training packages increased their mean scores on trained role-play scenes along with generalization to untrained role-play situations. Here again, however, no significant generalization effects were assessed in the natural setting.

A replication of the above study was done by Shafer, Brooke, and Wehman (1985) in an attempt to teach three different social tasks (handling criticism, taking a joke or sarcastic remark, and soliciting assistance) to a moderately retarded individual working as a custodian in a large shopping mall. All training and posttraining probes were conducted in an analogue setting isolated from the natural environment. The results of the study showed increased mean effectiveness scores on the role-plays along with generalization to untrained role-play scenes. In addition, generalization to the natural environment was probed by having the employee's supervisors "set up" situations that called for the use of the social behaviors being trained. Partial generalization to a natural environment was found to occur; that is, the participant showed improvement on the social tasks, but failed to meet the supervisor's minimal acceptance standard, a criterion in evaluating the social competence of the person.

Another example of the application of a social skills training package is provided by Karlan and Rusch (1982), who investigated a relationship between acknowledgement (e.g., saying "okay" or "yes") and compliance (i.e., initiation of action in response to a request) in a vocational training site. The study's results indicated that verbal prompts to acknowledge the receipt of an instruction (a trainer said, "Tell me okay") affected acknowledgement negatively but compliance positively; that is, when the participants were verbally prompted to say "okay", they complied with the instruction previously given rather than acknowledging it. Token points (in this case, plus marks redeemable for a special privilege such as a diet soft drink) resulted in great improvement on compliance. No follow-up was conducted.

Hall, Sheldon-Wildgen, and Sherman (1980) also used a social skills training package (instruction, modeling, role-playing, and positive, corrective feedback) for increasing job application and interview skills of six mildly and moderately retarded adults. The result of the study showed a substantial increase in participants' performance in each job interview skill along with generalization to untrained, structured situations.

Gibson, Lawrence, and Nelson (1976) made a comparison of the elements of social skills training packages with three mildly and moderately retarded adults for three social responses: verbalization (e.g., talking directly to peers), recreation (e.g., playing cards or games), and cooperation (e.g., sweeping floor with others). Different training procedures were provided: (1) modeling, (2) instructions and feedback, and (3) modeling, instruction, and feedback. In modeling, videotapes of nonretarded adults were employed. The most effective procedure was a combination of modeling, instruction, and feedback, followed by a combination of instruction and feedback. Modeling alone was the least effective procedure of the three. Neither maintenance nor generalization effects were assessed.

Other techniques. Four studies employed techniques other than a social skills training package in social skills interventions with moderately retarded individuals. A study by Dwinell and Connis (1979) used social feedback to reduce the inappropriate verbalization of a moderately retarded male in a restaurant that served as the vocational training site. The treatment procedure included the following components: praise for not verbalizing inappropriately, reprimands, and instruction. The result of the study showed a decrease in appropriate verbalization, but no generalization effect was assessed.

Rusch, Weithers, Menchetti, and Schutz's study (1980) investigated different treatment effects with different agents delivering contingencies. Verbal feedback was used to reduce the topic repetition of a moderately retarded male. During training, either the experimenter or co-workers, at different times, told the participant that he repeated the same topic too often and that several of his co-workers had expressed the wish he not do so. The study's results indicated that a combination of co-worker feedback plus an experimenter feedback was the most effective in reducing topic repetition. Experimenter feedback alone was the least effective. A strength of this study was the introduction of social validation in the identification of target behavior, training, data collection, and criterion level. Co-workers and supervisors identified a target behavior. Co-workers were preinstructed to deliver verbal feedback and were interviewed regarding the participant's frequency of repetitions. Of most importance was the assessment of the criterion level of nondisabled co-workers' topic repetition in comparison with that of the participant. This comprised the first instance of the use of normative data as criterion in studies with moderately and severely retarded individuals. Of particular interest was the finding that

co-workers believed that the participant was not reducing the topic repetition even though a direct measurement indicated the opposite result.

Stanford and Wehman (1980) employed verbal prompts and reinforcers to increase the level of social interactions between two moderately retarded employees and their nondisabled co-workers during their lunch breaks. In addition, Stanford and Wehman coached the nondisabled co-workers to be receptive to interacting with the mentally retarded employees. The study result showed a marked increase in the participants' social interaction with their co-workers.

Breen, Haring, Pitts-Conway, and Gaylord-Ross (1985) conducted a study in which nondisabled high school co-workers taught social break-time behaviors to four high school students with autism. The training occurred in a simulated break time at a work site between pairs of autistic and nondisabled students. Generalization was then assessed with the actual co-workers during real break times. In training, social behaviors required during a break (e.g., making coffee and chatting with co-workers) were task analyzed and taught using a level of prompt hierarchy, contingent reinforcement, and a massed trial method for the steps that proved difficult to learn. A multiple exemplar strategy (Horner, Sprague, & Wilcox, 1982; Stokes & Baer, 1977) was used; that is, if the disabled youth did not generalize to the co-worker after training with a given peer, training with a second (or additional) peer was introduced until generalization appeared. All four participants succeeded in learning skills with three or more co-workers in the natural break setting (mean = 4.0 different co-workers). When the participants initiated social interaction, natural co-workers typically responded by saying "Oh, that's nice" and by attending to the participants. However, they did not reciprocally extend the interaction. The authors drew the inference that it might be necessary to modify the receptor culture (in this case the natural co-workers) as well as to modify the behavior of disabled persons so that a greater proportion of extended social exchanges between the disabled and the nondisabled persons would occur. For example, a dyadic training with both potential interactants could be conducted. In addition, the disabled person could be placed in receptor groups that might be more responsive to bids from disabled persons.

Critical Issues

As shown in Table 4.2, a variety of social skills training packages have been found to be effective intervention procedures for inducing social responses in employment settings. Notably, none of the studies assessed the

Text continues on p. 220.

TABLE 4.2 Summary of Social Skills Interventions for Persons with Severe Handicaps

Authors	*Subjects*	*Target Behaviors*	*Setting*	*Intervention*	*Agent*	*Generalization*	*Social Validation*
Bates (1980)	16 moderately retarded adults	small talk, asking for help, differing with others, & handling criticism	analogue setting	Social Skills Training Package (SSTP)	experimenter	not occurred	no
Breen et al. (1984)	4 autistic high school students	social interaction	restaurant	task analysis, multiple exemplar strategy	co-workers	yes, to natural co-workers	no
Chadsey-Rusch et al. (1984)	3 moderately retarded kitchen laborers	question-asking	analogue setting	SSTP	trainer	not measured	yes
Dwinell & Connis (1979)	1 moderately retarded male	reducing inappropriate verbalization	restaurant	social feedback	experimenter	not measured	no
Gibson et al. (1976)	3 mildly/moderately retarded adults	verbalization, recreation, & cooperation	residential setting	SSTP	experimenter	not measured	no
Hall et al. (1980)	6 mildly & moderately retarded adults	job application & interview	analogue setting	SSTP	experimenter	*natural setting:* not measured; *untrained situations:* yes	no
Karlan & Rusch (1982)	2 moderately retarded kitchen laborers	acknowledgment & compliance	kitchen	SSTP	experimenter	not measured	no
Rusch et al. (1980)	1 moderately retarded kitchen laborer	reproducing topic, repetition	dining hall	verbal feedback	co-worker, experimenter, & supervisor	not measured	yes
Rusch & Menchetti (1981)	1 moderately retarded kitchen laborer	following instruction	kitchen	SSTP	co-worker & supervisor	yes, to a non-treated group	yes
Shafer et al. (1985)	1 moderately retarded custodian	handling criticism, soliciting help	analogue setting	SSTP	experimenter	partial, in a natural setting	yes
Stanford & Wehman (1980)	2 moderately retarded adults	socialization	dining hall	verbal prompt & feedback	experimenter	not measured	no

Note: All studies reported training effects. Maintenance was measured only by Dwinell & Connis (1979), who reported treatment effects continued at 4 weeks.

maintenance of treatment effects. Further, in most instances, treatment effects were shown only for the trainer or co-workers who were involved in the study. The majority of studies either did not assess, or failed to demonstrate, generalization effects across different agents (i.e., other people besides the trainer) in different natural settings. It is interesting to note, however, that generalization effects were demonstrated to occur in some studies that involved co-workers, supervisors, and employers. For example, in Rusch and Menchetti's (1981) study where supervisors and kitchen laborers were involved in collecting data and delivering consequences, treatment effects were generalized to a nontreated group. Also in Breen et al.'s (1985) study, in which nondisabled high school students taught social break-time behaviors to students with autism, a generalized treatment effect to natural co-workers was observed. Among the studies that employed a social skills training package, Shafer et al. (1985) was the only study to demonstrate a partial generalization of treatment effects to a natural setting: the other studies failed to demonstrate cross-setting generalization effects in natural settings. In Shafer et al.'s (1985) study the participant showed a generalization of learned social behaviors to untrained role-play scenes, but demonstrated only a partial generalization to his work supervisor.

Generalization of social behaviors. Generalization has become a critical issue in social skill research with moderately and severely disabled individuals (Gaylord-Ross, Stremel-Campbell, & Storey, 1986; Gresham, 1981; Horner, McDonnell, & Bellamy, 1986; O'Leary & Drabman, 1971; Stokes & Baer, 1977). The generalization of learned social skills across co-workers, supervisors, and employers becomes crucial in job retention since these are the persons who will make the ultimate judgment about the effectiveness of skills demonstrated by the disabled employee. Many studies have clearly shown that failure to demonstrate appropriate social skills is directly related to job termination.

While there is no study available to demonstrate that generalization may be facilitated by including co-workers or supervisors compared to studies without inclusion of co-workers, it can still be said that the inclusion of significant other persons during intervention seems effective in promoting generalization effects. Among all the studies reviewed, only two studies that included co-workers and supervisors have demonstrated generalization effects, Breen et al. (1985), and Rusch and Menchetti (1981). It must be said, however, that certain issues arise when including co-workers and/or supervisors in social skills intervention for a disabled worker. How can these workers be utilized effectively? If these individuals are used, how will their participation affect future interactions and attitudes toward workers with disabilities? (Chadsey-Rusch, 1986). How will their inclusion affect the disabled workers themselves? These are very sensitive issues, which can affect the relationship between disabled workers and nondisabled workers. Therefore, any intervention procedure including co-workers and supervisors should be carefully planned.

Process training. Another way of promoting the generalization of learned skills is to teach the generative process of social behavior rather than a specific component of behavior (Trower, 1984). All of the studies on social skills intervention have taught specific component behaviors. Trower (1984) points out that the major limitation of teaching specific molecular behavior is that it will not lead to a clinically significant change (e.g., maintenance and generalization of social skills). For example, a person may be taught a molecular behavior (e.g., saying "hi") in different situations and with different persons (e.g., co-workers). On the other hand, when a person is taught a process of understanding a social situation and his resulting behavior, it increases his chances of using the behaviors in many settings. Stokes and Baer (1977) referred to this process as self-mediated generalization. Trower (1984) has delineated process training to include decoding a situation, generating alternative responses, selecting and performing a best-fit response, and evaluating the response (e.g., why and how to greet persons in a workplace). The application of reasoning in social situations should enhance social effectiveness in many settings. For example, a worker is more likely to say "hi" to different co-workers and supervisors. Gambrill and Richey (1986) refer to training of the generative process governing the production of behavior in social interaction as a process model, and training of component behaviors (e.g., verbal and nonverbal behavior) as a component model. Process approaches include McFall's model (McFall, 1982) and Trower's model (Trower, 1982, 1984; Trower, Bryant, & Argyle, 1978) while the component approach includes behavioral social skills training packages (such as those reviewed here).

Besides teaching the reasoning process, the process model utilizes self-monitoring techniques that can promote the generalization of learned skills. If an individual is trained to monitor and direct his or her own social behavior, it is likely that the person will use self-monitoring skills to perform adequately on a social task in the absence of a trainer or in a variety of settings. This ability becomes paramount in the employment setting because the continuing presence of the trainer in the work setting is not considered as natural, and because the person being trained is likely to encounter new social situations other than those taught by the intervention program. Several studies have confirmed that self-monitoring skills can be taught to mentally retarded individuals (Connis, 1979; Sowers, Rusch, Connis, & Commings, 1980; Sowers, Verdi, Bourbeau, & Sheehan, 1985; Wacker & Berg, 1983). Instruction in self-monitoring techniques holds promise for improving the social performance of disabled persons in work settings. Future research in the area of social skills intervention might move toward the application of the process approach (cf. Park & Gaylord-Ross, in press.)

Studies published thus far have concentrated on modifying a disabled person's social skills. Future research should look into the modification of the receptor culture as suggested by Breen et al.'s study (1985). Social competence is primarily defined by the overall judgment of significant others in the work setting. In keeping with the meaning of this term as it has been used in an eco-behavioral perspective, social competence or incompetence is a matter of congruence or incongruence between a person and the environment (Chadsey-Rusch, 1986). Therefore, any intervention effort can focus either on a person or on his/her environment. The modification of the environment (e.g., altering a co-worker's and/or supervisor's expectation) could be particularly effective for some disabled persons in developing a positive interpersonal relationship with their co-workers and/or supervisors.

SELF-MANAGEMENT

Since self-management is such an important emerging goal in special education, let us give further attention to its conceptual characteristics, as well as illustrate its further applications to vocational settings. Many employment training programs for persons with mental retardation use a job coach as an external change agent (Rusch, Martin & White, 1985; Wehman, Schutz, Bates, Renzaglia, & Karan, 1978). In this type of setting, the generalization of treatment gains is restricted as the trainer takes on the properties of a cue or discriminative stimulus (S^D). Following training, the target behaviors will occur only in the presence of the S^D, limiting maintenance and generalization of the newly acquired skill. Appropriate strategies must be employed that allow stimulus control to be transferred from external to internal sources. In addition, the ethical, legal, and philosophical implications of externally controlling behavior has caused increased investigation of alternative methods of behavioral treatments (Gardner, Cole, Berry, & Nowinski, 1983). Self-management procedures internalize stimulus control, thus facilitating the maintenance and generalization of behavior change (Bandura, 1986; Fowler, 1984; Gifford, Rusch, Martin, & White, 1984; Mank & Horner, 1987; O'Leary & Dubey, 1979; Rosenbaum & Drabman, 1975; Rusch & Schutz, 1981; Wacker & Berg, 1983). Self-management techniques with mentally retarded persons have been used to increase the individual's performance in different aspects of his vocational training (Bates, Renzaglia, & Clees, 1980; Fowler, 1984; McNally, Kompik, & Sherman, 1984; Sowers, Rusch, Connis, & Cummings, 1980; Sowers, Verdi, Bourbeau, & Sheehan, 1985) in a cost-effective manner (Fowler, 1984; Storey & Gaylord-Ross, 1987). Self-management training has taken many forms; from the use of picture cues (Sowers et al., 1980; Sowers et al., 1985), to the use of self-instructional talk (Agran, Fodor-Davis, & Moore, 1986; Agran, Salzberg, & Stowitschek, in press).

Definition

Under the general rubric of "self-management" falls a variety of different terms (Shapiro, 1981). Kanfer and Gaelick (1975) have proposed a three-stage model of self-management. Self-monitoring is the process in which the individual observes and records the occurrence of a specific behavior. Self-evaluation is the process by which individuals compare the observed behaviors with the criterion they have set up for themselves. Self-reinforcement is the process by which individuals either positively or negatively reinforce their own behavior as a result of the self-monitoring and self-evaluative processes.

McFall (1982) discusses two basic uses of self-management techniques: data collection and as a therapeutic strategy. For the purposes of data collection, the behavior analyst primarily uses the self-monitoring aspect of the self-management paradigm. A major difficulty in the use of self-monitoring for data collection results from the inevitable interaction between components of the self-management procedure; that is, the heightened awareness of a behavior while measuring it may reactively cause it to increase or decrease. Thus, self-monitoring for assessment purpose may yield inaccurate data.

Therapeutic uses of self-management use all four components of the self-management process (self-monitoring, self-evaluation, self-reinforcement, and self-instruction). Nelson and Hayes (1981) propose that benefits of the self-management process are not solely connected to the actual physical act of self-monitoring; they argue that the training of the self-monitoring response, comments from others about the self-monitoring device, and the self-monitoring responses all influence the target behavior through a reactive interaction.

Shapiro (1981) has pointed out two reasons why self-management procedures have not been used more extensively with mentally retarded persons. First, it may be too difficult to learn the abstract qualities of the self-management processes. Second, mentally retarded persons are often kept dependent by society. This dependency precludes the individual's attempts to guide his or her own behaviors through the use of self-management procedures. These obstacles notwithstanding, Mank and Horner (1987) have shown that the mentally retarded client can learn self-management strategies without excessive training. In addition, professionals are concerned that the mentally retarded client has only limited control over his or her own behavior change process (Gardner et al., 1983; Kazdin, 1975) and are actively working towards the development of client-originating, self-management procedures (Gardner et al., 1983; Kazdin, 1975; Shapiro, 1981).

Self-management in Vocational Settings

Picture cues. A major advantage of self-management techniques is that mentally retarded vocational trainees with limited academic abilities can benefit from these training strategies. The use of picture cards and other visual prompts has been shown to be effective for training individuals with limited academic abilities (Connis, 1979; Sowers et al., 1985; Wacker & Berg, 1983; Wacker, Berg, Berrie, & Swatta, 1985).

Wacker and Berg (1983) studied the effects of picture prompts on the acquisition of complex vocational tasks by mentally retarded adolescents. Picture prompts were used to teach five moderately and severely mentally retarded high school students to do four complex vocational tasks. The training in picture prompts (consisting of teaching the students to sequentially turn pages in a picture book and then selecting the correct picture of a specific value) was found to be successful in teaching trainees to assemble complex objects. Following training, all students were able to perform without errors. In addition, Wacker and Berg (1983) found that the training results generalized across time. The Wacker and Berg (1983) study demonstrated that mentally retarded workers can learn complex vocational tasks using self-management strategies. It also proved that the trainee need not possess reading skills, that picture-cue prompts can serve as effective S^Ds for maintaining learned behaviors.

Sowers et al. (1985) studied the use of picture cues in teaching moderately and severely retarded workers to be more independent and flexible on the job site. The study included four males (18–21 yrs.) from classes for moderately and severely retarded persons, none of whom could read. In the picture-cue training system all students were trained to use picture-cue prompts. The system had two major components: a picture-cue apparatus and the four self-management elements outlined above. Picture-cue cards were put on a photo album page and hung in an accessible location at the work site. Pictures representing the day's tasks were inserted in the sheet in the assigned order. The sheet was attached to a clipboard with a water-based pen. Using picture cues the students were trained to sequence job tasks correctly. They were required to go through the following sequence of events: (a) return to picture cue following completion of a task, (b) mark off the picture corresponding to the task, (c) touch the picture of the next task, and (d) begin that task.

Training to use the picture cues and self-management behaviors was instituted in three phases. In Phase A the trainer presented each picture to the student, named the task, and escorted the trainee to the task. After being introduced to the picture-cue apparatus, each student observed the trainer model the appropriate self-management behaviors; was then given the picture-cue apparatus, with seven pictures inserted; and was prompted through the self-management steps.

In Phase B the same procedures were used as in the previous phase, but the students were not prompted through each of the self-management steps. Phase B was continued until a student achieved two consecutive days of 100% independent task change. During Phase C the students were reminded to do each of the self-management steps. Praise was given only after successful completion of the four self-management steps. Corrective feedback was given after any error. Maintenance and generalization probes were conducted in simulated settings modeled after settings in a competitive job situation.

As a result of the training, the number of independent task changes improved immediately after the student entered Phase B of the treatment. The results showed that the use of picture-cue, self-management procedures is an effective, efficient, and practical procedure in employment settings. These results further support the results of previous studies using picture cues (Connis, 1979; Sowers et al., 1985; Wacker & Berg, 1983).

Job productivity. Self-management techniques can also be used to increase the mentally retarded worker's job productivity. An exemplary study using self-management techniques to increase worker productivity rates is McNally et al. (1984). Using a three-part treatment package, coupled with a changing criterion design, the researchers were able to increase the work productivity of mentally retarded workers. The training program, consisting of a combination of self-monitoring, self-reinforcement, and performance feedback, substantially increased the clients' work productivity. The clients ranged in age from 23 to 49 years and were mildly to moderately retarded.

On the first day of the treatment phase each client was given a stack of pink and blue tokens. The number of pink tokens was determined for each client to be $N - 1$, where N was the number of production units completed in an average time period during the baseline phase of the experiment. During the work period of the experiment's treatment phase, as the clients completed a unit of production they would take a pink token from a dispenser. After self-administering all the pink tokens (achieving baseline production rates) the worker would self-administer blue tokens. Self-administration of the first blue token signified the exceeding of baseline performance. Clients reported taking the first blue token to the shift supervisor who then lit up a sign with the client's name on it. Any client whose name was lit up received 30 minutes' leisure time at the end of the work day. In addition, at the end of each work day, all blue tokens were attached to a bar graph on a wall in the work area. Clients who earned the most blue tokens on different days were treated to lunch.

After the second, fifth, and sixth treatment day, individual mean production rates were recalculated. The results of this calculation determined the ratio of the pink and blue chips for the following days. This procedure allowed the training strategy to remain dynamic in terms of the demands put on the performance levels of the client through the implementation of a changing criterion design.

McNally et al. (1984) report that these self-management procedures significantly increased the production rates of the mentally retarded workers participating in the study. They also report that the study was time- and cost-effective and required only approximately 20 minutes of the supervisor's time each work day. Although there was an improvement in production rates, no client achieved a normative industrial rate of production.

The investigation of self-reinforcement with mentally retarded persons has been investigated extensively (Baer, Fowler, & Carden-Smith, 1984; Coleman & Whitman, 1984; Horner & Brigham, 1979; Mank & Horner, 1987; Rudrud, Rice, Robertson, & Tolson, 1984). The self-reinforcement of tokens or edibles has been found to maintain or improve vocational performance with mildly or moderately mentally retarded individuals (Bates, Renzaglia, & Clees, 1980; Helland, Palluck & Klein, 1976; Horner, Lahren, Schwartz, O'Neill, & Hunter, 1979; Jackson & Martin, 1984; Srikameswaran & Martin, 1984; Zohn & Borstein, 1980).

Job task sequencing. Agran et al. (in press) have investigated the use of self-instruction to improve job-task sequencing. Self-instruction training consisted of supplying the trainees with a rationale for using the treatment strategy, modeling, behavioral rehearsal, verbal rehearsal, corrective feedback, and contingent reinforcement. Agran et al. (in press) trained mentally retarded workers to make three types of verbalizations: statements that describe a problem, statements that describe what is needed to rectify the problem, and statements describing the actions taken to rectify the problem. They found that self-instructions may facilitate the acquisition and later generalization of work skills for persons with severe handicaps. In addition, they found that self-instructional strategies promote the maintenance and generalization of treatment gains.

Self-reinforcement. Another self-management procedure is self-reinforcement. This strategy involves the self-determination and self-administration of reinforcement (Jones, Nelson, & Kazdin, 1977). In a study by Helland, Palluck, and Klein (1976), the effects of self-reinforcement and external reinforcement on production rates were compared. Participants in the self-reinforcement group were trained to reinforce themselves (i.e., compliment themselves and select a reinforcer) upon the completion of assigned tasks. The participants in the external reinforcement group were given supervisor-delivered reinforcement following successful completion of assigned work. While results indicated that both reinforcement conditions were effective in raising production levels, it is to be noted that the participants in the self-reinforcement group worked independently of direct supervision.

Social skills in the work setting. Self-management procedures need not be used only to increase the accuracy or production rates of the mentally retarded worker. Storey and Gaylord-Ross (1987) found that contingent reinforcement and self-monitoring could maintain substantial rates of positive social behaviors during the worker's break. By using a series of sophisticated research designs in their experiments, Storey and Gaylord-Ross (1987) were able to isolate the salient components of their treatment plan. Self-monitoring and contingent reinforcement could maintain normative rates of performance.

Students were trained to use a tally procedure to self-monitor the number of positive verbal statements made during break time at an office complex. The treatment package consisted of role-playing, self-monitoring of positive statements, modeling, contingent reinforcement, and graphic feedback. As the clients played pool during break time, they were given cards to check off a predetermined number of positive statements that they were required to make to their companions who were also playing pool. For the self-monitoring aspect of the treatment, each client was supplied with a 3" × 5" index card with numbers (e.g., 1, 2, 3). The worker knew that he had to make that number of positive statements during the game of pool in order to receive the contingent reinforcement.

Results showed that the clients significantly increased the amount of positive social statements to their peers. However, genealization probes across settings failed to show any carry-over of the newly acquired responses.

An advantage of self-management procedures is the cost- and time-effectiveness of these procedures (Fowler, 1984; Storey & Gaylord-Ross, 1987; Wacker and Berg, 1983). Cost- and time-effectiveness can be measured by the degree to which staff at the vocational setting are freed from the constant instruction involved in the vocational training of the mentally retarded worker. Fowler (1984) writes that reinforcing the use of self-management strategies at times of caretaker absences can promote greater client participation in an unsupervised activity. Researchers have found that self-administered reinforcements can equal the effectiveness of externally administered reinforcements in vocational settings (Connis, 1979; Helland, Palluck, & Klein, 1976; Wacker, & Berg, 1983). Wehman et al. (1978) have written that one of the major advantages of self-management in the vocational setting is that it frees staff for other duties.

Summary

The use of self-management procedures with mentally retarded workers in a vocational setting has been found useful in increasing the frequency of a large variety of positive behaviors. Complex tasks, complex task sequences, rates of production, and work-related social skills have all been increased through the use of the self-management techniques of self-monitoring, self-evaluation, and self-reinforcement. In addition, through the use of picture cues and other visual prompts, the self-management procedures need not rely on the worker's reading abilities.

As is clear from the research outlined in this section, self-management strategies involve a great variety of different behavior techniques, ranging from self-monitoring to self-reinforcing behaviors. All of the studies cited used a combination of one or more of these self-management techniques with other behavioral training techniques (i.e., contingent reinforcement, corrective feedback, and modeling). It will be difficult to determine the role of each of the different components of self-management techniques. However, this should not dissuade the behavioral analyst from using these techniques. We remain concerned with the development of independent and generalizable vocational skills in our clients and so should be aware of the high potential these techniques have for helping our clients attain their goals.

CONCLUSION

There is a growing body of research supporting the effectiveness and promise of vocational special education practices. Follow-up research has indicated that some employment training programs have been successful. Yet the definition of success may depend upon the measurement criteria used, e.g., job retention or quality of life. It would be useful to include more qualitative or ethnographic measures in follow-up studies in order to obtain a more experiential sense of the employment process. Follow-up research may also be criticized as being conducted in a political-economic vacuum. Social action research may wish to examine the effects of substantive employer–business involvement in the job hiring and retention process.

There has been a rapidly emerging literature demonstrating the effectiveness of techniques that promote generalization in vocational contexts. Outcome measures need to include more long-term indicators of maintenance effects. A critical research issue will be what proportion of simulated versus *in vivo* training is needed to produce generalized responding. Preliminary findings indicate that the individual's level of functioning may correlate with the need for more or less community-referenced training.

Although social skills training in the workplace has shown promise, there has been limited evidence demonstrating generalization and maintenance effects. Process models of social skills training have been advanced to enable individuals to decode the social environment, make behavioral choices, and evaluate their performance. Such process approaches, with their cognitive orientation, hold promise for inducing more extensive and lasting generalization effects.

Both social skill training and social support network analyses of the workplace offer an eco-behavioral approach. Rather than simply focusing on the individual and the person's skill deficits, the eco-behavioral perspective examines the social context of interactions and friendships. This may mean including peers in social skills training. It may also entail drafting a co-worker into a benefactor role. Such reciprocal notions of social interaction and social support are innovative ways to promote successful vocational adjustment.

Finally, the self-management process appears to underlie a number of the latest developments in vocational special education. Self-management techniques have been used to increase production performance of job tasks. The techniques have promoted generalization across settings, persons, and materials. Their utility in social skills training has already been cited. Most important, self-management has promoted independence in the workplace. Early research showed how picture cues can be used to prompt disabled employees from one task to the next. More recently, workers have first self-monitored their performance and subsequently recruited reinforcement feedback. In all cases, self-management encourages independent performance as the individual relies less on supervision from others.

We have attempted to review a sample of the most important research topics in vocational special education. Undoubtedly we have left some topics out, for example, the new developments in vocational assessment identifying critical behaviors in an efficient and situationally valid manner. Other research topics, such as vocational education in the primary grades, have been largely ignored and are in need of further investigation. We hope to have given the reader a sense of the critical topics in this field. The ultimate purpose of vocational special education is to facilitate the transition of disabled students into successful employment. Research in this field must thereby document those instructional procedures that lead to the acquisition, generalization, and maintenance of a wide range of occupational and social skills.

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System-Centered Variables

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School integration for students with mental handicaps: A cross-cultural perspective*

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ABSTRACT

Descriptive information was presented which related to the school integration of students with mental handicaps in four western European countries. The investigator based his findings on a five-month visit to Great Britain, Italy, Switzerland, and West Germany. Observations, interviews, and documents were synthesized to draw conclusions about educational programs. Preliminary inferences were drawn about the development of educational models in these countries and the United States. Potential variables were identified which influence systems change toward integrated school models.

INTRODUCTION

In the United States there has been a growing movement toward integrating or placing students with mental handicaps[1] in regular public schools. This trend was formalized in the federal Public Law 94-142, which advocates for the education of the handicapped student in the least restrictive environment. Although there has been substantial movement toward school integration, particularly for students with severe disabilities, the realization of the goal of full integration is still far from complete. For example, a recent survey in California (Honig Committee, 1985) reported that 50 per cent of all students with severe handicaps were placed in integrated school settings,[2] and 20 per cent of the severely handicapped students who had profound disabilities were assigned to regular schools. It should be useful for educators to examine the process of systems change toward integrated school models. One research tactic is to cross-culturally investigate the development of the integrated programs in a number of countries. It is possible that certain patterns of systems change may be uncovered.

The present study attempted to describe the status of school integration, *circa* 1986, in four countries in Western Europe. The descriptions were based on selected

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interviews, document reviews, and program observations by the author. It was hoped that from the descriptive level, preliminary inferences could be drawn about movement toward school integration in the five countries and the United States. Out of this discussion an attempt would be made to identify specific variables which appear to influence the systems change process.

METHOD

During a five-month stay I visited four countries in Western Europe. My length of stay varied considerably: Italy (7 weeks), West Germany (7 weeks), Great Britain (3 weeks), and Switzerland (1 week). During that time I investigated both school and work integration programs for persons with mental handicaps. I also visited Denmark for two weeks to examine vocational programs. I typically stayed in a city from four to seven days. During my visit I conducted interviews (N = 250) which lasted from 5-90 minutes. I observed schools, work, and related programs (N = 75). I also read documents (N = 500) describing educational programs and policy. From the larger data base, the events specifically related to school programs were: interviews (n = 80), observations (n = 20), and documents (n = 200). The interviews were conducted in an office or while touring a school program. I asked questions about the instructional methods, curriculum, and history of integrated or segregated programs. Sometimes the conversation drifted to non-educational topics, e.g., cultural or political developments in the country, which I felt were quite valuable in obtaining a contextual backdrop for my research. I made contacts for the visitation through my previous professional acquaintences, members of the Office of Economic and Cooperative Development and through continual networking during my visit.

Description by Country

West Germany

The Federal Republic of Germany has a largely decentralized system of special education. Almost all of the power to set policy resides with the local *länder* or regional government. There appears to be little federal direction toward the länders in developing integrated school programs for students with mental handicaps. There has largely developed a segregated school system to serve these students. At one extreme, I visited a segregated school on an institutional campus that was bussing students in from the community. Many educators appeared to equate the efficacy of a program with the impressiveness of a building facility. I observed this with both school and sheltered workshop facilities. During my visit to West Berlin, a new facility was near completion to serve students with physical and multiple handicaps. There appears to be substantial funding for special education programs, but this is, by and large, not being directed toward integrated services. A parent of a severely handicapped child told me that there has never been a problem in getting resources from the schools to obtain equipment, tutoring services etc; but there is great difficulty in developing integrated program models. A special education teacher expressed to me her view toward school integration with the statement: 'How much of it is integration, and how much of it is toleration?' Unfortunately, this view seems representative of many educators within the Federal Republic of Germany.

In the midst of this general trend, there have been pockets of integration activity. Perhaps the leading site is in Bremen. Led by Georg Feuser and Heidi Rose, a network of preschool integrated programs has arisen during the past 10 years. As these students advanced there has been further integration in the primary grades. There is hope that future cohorts of handicapped students will advance toward integrated secondary schools. An indirect index of consumer satisfaction with school integration was communicated to me by Feuser. He said that in 1978 a survey was completed throughout West Germany and about 70 per cent of the population favored segregated services for handicapped persons. In 1985 the identical survey was given in Bremen and only 50 per cent favored segregated services. This difference could be due to the attitudinal impact of integrated school programs in Bremen or it might be due to the generally more liberal attitudes of the Bremen populace.

In addition to the work in Bremen, there have been other sites where integration has advanced. There has been preschool and incipient primary school integration in West Berlin. In addition, the influential parent group 'Elter fur Integration' is based in West Berlin. This group has had a national impact on promoting integrated services. Aslo, there has been a visible integrated preschool network established in the Munich area (Speck, 1977). Finally, integrated school services have begun to appear in Heidelberg.

Overall, although West Germany is dominated by segregated school services, it may be very slowly moving toward an integrated model. During my visitations, the term 'integration' was voiced by many educators in a positive way. In fact, (as I observed in the US), the valued term 'integration' was often overgeneralized in its usage so that an art therapist commented how he was using integration in his work (in an institutional setting). How much integration remains a revolution in verbal behavior or a ture change in service systems, remains to be seen. An approach to systems change in Europe was reflected by a conversation I had with a graduate student at the University of Rome. He said that 'in Europe, for every 100 ideas there is one action; in America, for one idea there are 100 actions.' This notion was repeatedly expressed to me in West Germany. That is, the theoretical ramifications of a new program idea must be thoroughly discussed and resolved before a new idea can be implemented. Europeans view American approaches to systems change as lacking in theoretical rigor, and overly steeped in an engineering enthusiasm to get something done. From an American perspective, theoretical dialogue may become excessive and paralyze systems change efforts. In West Germany, at least, it appears that there will be continued discussion of the merits of integration. A predominantly segregated school system is likely to continue with a gradual replication of integrated school models in newly interested sites. As President Van Weizacker stated in response to my question: 'The integration of handicapped persons into German society is a goal he supports, but one which awaits the public support of the German people for its full implementation.)

Switzerland

Since I only spent a week in Switzerland, my report on its educational programs is based on a cursory examination. In general, Switzerland appeared to have a very similar approach to West Germany with respect to school integration. There was a largely segregated system for students with mental handicaps (Brown and Brown, 1984). In addition, there appeared to be little federal policy direction in promoting integration. Although there was recent interest in transition (Bernath and Kayser, 1984), mentally handicapped persons were primarily being placed in sheltered work settings. In contrast to West Germany, there did not appear to be an emerging network of integrated model sites.

England

An examination of the educational services in England is both interesting and complex. One must carefully distinguish activities at the philosophical level from those at the level of educational practice, as well as how theory and practice intertwine. At an ideological level, there is a strong value for the integration of persons with mental handicaps into society (Mittler, 1985). Furthermore, the national law of 1981 encourages education to take place in mainstreamed settings. Yet, there is a heated ideological discussion about the merits of the practice of school integration. A Substantial number of professionals and parents feel that the special schools have delivered fine instructional services. One example that was repeatedly pointed out was how the career counselors and teachers in special schools had successfully placed their graduates in nonsheltered employment positions. It appears that when an alternative, segregated service system is perceived to have been effective, it decreases the chances of rapid systems change into an integrated model. Although there is much discussion of school integration, there is still considerable professional activity related to segregated services. For example, the University of London recently completed research to contrast alternative treatment models provided within special schools for profoundly retarded students (Evans, 1986).

In summary, although there is an explicit value favoring integration, the intellectual exchange appears to cling to a 'null hypothesis' view of integration. That is, professionals await for clear evidence that demonstrates the effectiveness and superiority of an integrated model. In the meantime they sometimes cite the accomplishments of special schools as well as the risks entailed in integrated programs. This clinging to the null hypothesis, though, tends to prolong the continuation of the extant model. A similar phenomenon occurred in the US in the 1960s and 1970s when a sizable group of mental retardation researchers said there was little evidence to demonstrate the superiority of community living. Until such evidence appeared, they could not support the deinstitutionalization movement, and by implication, gave credence to existing institutional programs.

It should not be concluded, though, that there is an absence of intellectual advocates for school integration. Seamus Hegarty has written and advocated strongly for school integration. Faculty at the Open University have been visible advocates for integration. Most recently, and more importantly, John Fish has spearheaded the Fish Report (Inner London Education Authority, 1985). The report examines special education practice in the London area. It specifically calls for increased integration through a unique model. The report proposes using the special schools as resources for regular schools. The handicapped students continue to be matriculated at the special school but spend increasing portions of their time in activities at the regular schools. This might be viewed as a compromise integration plan since it prolongs the existence of special schools. Yet, the plan fits the *zeitgeist* of regular and special education in England. For this reason it is being widely quoted and favorably received. If and when the plan is implemented, it could have a far-reaching impact on policy in London and the rest of the country.

The ideological impact of the Fish Report is greatly needed if the status of school integration is to change substantially. For all intents and purposes, educational programs for students with mental handicaps are segregated. Not only do the special schools in England serve students with moderate and severe handicaps, but the predominant place of instruction for students with mild mental retardation is in special schools for this population. Although this article addresses school-aged persons, segregated programs continue into the post-school years through a network of adult day programs. Yet, there is an expanding 'Further Education' movement to establish programs for adults with mental handicaps (Dean & Hegarty, 1984; Whelan, Speake, and Strickland, 1984).

Although special schools predominate, there has been some movement toward integrated practice. There are currently four local school districts which provide integrated educational services for a large number of their students with mental handicaps. These districts are: Derbyshire, Oxfordshire, Sheffield, and the Bromley section of London. In addition, a number of districts are moving mentally handicapped students from their segregated school to a regular school for activities during part of the school work. Since I visited the program in Oxfordshire, I will comment on it in more detail.

The county of Oxfordshire has moved toward an integration model of education for most of its students with severe handicaps. It is always interesting to examine how different school districts develop integrated programs. In the United States integration often evolves because of parent-initiated fair hearings or class-action suits, low rates of funding for students in segregated facilities, available space in public schools; as well as by coordinated planning by professionals and consumers. In Oxfordshire, the first site developed through a number of fortuitous circumstances. First, a large state hospital in the region was being deinstitutionalized at a rapid pace. As many of the children were placed in homes in the local region, there developed a need for educational programs in the community for students with mental handicaps. While special schools were established, a parent of one of the handicapped children happened to be the headmaster of a local elementary school. He suggested developing a program for mentally handicapped students in his school. Through coordinated planning between regular and special education, integration programs developed in this primary school, and later spread to another primary school and secondary school. Professionals repeatedly told me that the growth of integration was not due to forcing the concept on people. Rather, a gradual understanding emerged in the community that integration represented superior educational practice.

A second integration plan for students with autism evolved in Oxfordshire in a different way (Coates, 1985). In this case three autistic children (age 7–10) were served solely by home tutors. As the home tutors also taught in a local primary school, its headmaster empathized with their isolation in working with these three students. The headmaster invited the tutors to bring the autistic students to his school for part of their education. The former asked regular education teachers (without pressuring them) if they would be willing to have a handicapped student and the special instructor in their class for part of the school day. A number of teachers responded favorably and the program began. The special education instructors continued to use task analysis and systematic instructional procedures within a 1:1 teaching format in the regular education class. Over time, the student participated in small group instruction and spent longer portions of the day in the public school.

The primary and secondary programs I observed in Oxfordshire served students with moderate and severe mental retardation. There was a special education class from which integration activities were based. In the primary school an informal special friend (Voeltz, 1980b) or buddy system was established where a handicapped and nonhandicapped student paired off for leisure activities during recess. I also observed peer tutoring programs in effect in the primary and secondary schools. Here, regular education students taught their handicapped peers such skills as microcomputers, swimming, and needlework. Although there was much formal and informal contact among handicapped and nonhandicapped students, there was no evidence of functional vocational training or work experiences at community job sites in order to prepare individuals for employment. In fact, a number of professionals expressed concern about the lack of integrated work and educational experiences for adults with mental handicaps.

In summary, there exists a small number of impressive integration programs in England. Although school integration appears to be a valued concept, there is much dialogue about its merits, with many persons favoring the continuation of special schools. The recent Fish Report, with its proposed model of school integration, offers promise for more substantive systems change, with school integration being expanded in London and throughout England.

Italy

Italy is a country which has made radical systems change toward the integration of students with mental handicaps. Within the political flurry of the 1960s, an anti-segregation movement emerged with respect to services for persons with mental handicaps and mental illness. Professionals and the general populace agreed that extant state institutions and special schools were dreadful places which provided poor rehabilitation services. Under the leadership of the psychiatrist Basaglia (1968), a left-wing political movement embraced the concept of integrated residential, educational, and employment services (Gaylord-Ross, 1986). National laws were passed in the seventies which established the principle that all handicapped students be served in the public schools. Furthermore, integration was located in the regular education class. When a student could not succeed in the regular class he might be moved to a more specialized room for part or the whole day. In other instances a student might be further moved from the regular to a special school if his behavior or medical needs could not be accommodated. Still, anywhere from 80–95 per cent of handicapped students in every local district in Italy are educated in regular public schools. It must also be remembered that Italy only considers the lower 1–2 per cent of its school population handicapped. The mildly disabled are not served by special education. Thus, we are referring to 80–95 per cent of the moderately-severely handicapped population. This contrasts to the 50 per cent figure for California cited above.

Although the quality of services in integrated programs has been questioned (Meazzini, 1986), it seems that the federal regulations have guaranteed substantial resources for integration. For instance, the typical regular education class size in Italy of 25 is reduced to a maximum of 20 when a handicapped student is placed in that class. Second, there can be no more than two handicapped students in a class, although in almost all cases there is only one. Third, each handicapped student has a special education instructor in the class from 6 to 23 hours per week, depending on the needs of the student. This instructor is either a certified teacher or a paraprofessional. Although I observed this staffing pattern in Arrezzo and Parma, Hansen (1986) was told that the assistance of the special education instructor in the classroom was often not provided in preschool programs. The instructor's role is to not only to assist the handicapped student, but to also offer support for the whole class. She thus also spends considerable time working with regular education students. Also of interest, a special education teacher was required to spend part of their week teaching a regular education class. Thus, transdisciplinary roles are being developed between regular and special education. In summary, the regular education program receives extra services when handicapped students are present. This contrasts to the perception of many regular educators in the US that the presence of handicapped students detracts from their program resources.

I observed an impressive approach to social integration in the city of Arrezzo. Mario Cecchini has developed a model community integration program between the University of Rome and the city mental health department (Cecchini and McCleary, 1985). Therapists videotape a child's social interactions in both school and home settings. A nonbehaviorist interaction analysis based on the work of Freinet (1969) examines social interaction patterns. An emphasis is placed on having the child work on a task with instructors and/or peers until signs of foredom or fatigue appear. At that point the child is relieved from working on the task. Interactions and tasks where the child displays positive affect are also identified and increasingly used. The therapist counsels the teacher and parents on effective social integration and instructional strategies. Furthermore, the mental health center provides longitudinal consultation to home and school from the preschool to adult years. My suspicion is that the Arrezzo program is somewhat unique in Italy. Yet, it stands as a model of exemplary practice that could be replicated throughout the country.

In spite of the accomplishments of school integration in Italy, it has had its critics. Because of the revolutionary shift to integrated placements, some have felt there was not adequate planning and resources provided to facilitate integration (Meazzini, 1986, Sansone and Corao, 1986). One regular education teacher told me of her need for information and inservice on integrating handicapped students. Part of this concern could be related to the resistance by Italian professionals to behavioral techniques (Sansone and Corao, 1986). I feel that without systematic instructional technology (Gaylord-Ross and Holvoet, 1985), the potential of integrated programs is barely realized. For example, if a student is not taught to come under verbal stimulus control in a small group setting, there will likely be 1:1 instruction with much physical guidance. Furthermore, community training (Sailor, Halvorsen, Anderson, Goetz, Gee, Doering, and Hunt, 1986) entails the fading of an instructor in community settings so that the individual can behave more independently and with more natural modes of supervision. When students in integrated programs cannot be managed or effectively instructed, it is likely they will be placed in more restrictive, segregated settings. In fact, I visited a special school in Udine which was quite behaviorally oriented and had taken referrals from public schools for students who could not be managed or successfully taught. It appears that there is a need to provide behaviorally-oriented preservice and inservice training which will maximize the opportunities for integration in Italian public schools.

VARIABLES INFLUENCING THE DEVELOPMENT OF INTEGRATED SCHOOL PROGRAMS

Although the primary data of this investigation is at the descriptive level, it would be useful to draw some inferences about the types of variables which appear to influence the emergence of integrated school programs. Certainly these inferences must be considered suggestive, and in need of more thorough verification through historical and evaluative methods. In reviewing my findings, though, I have identified variables that appear to be present in the five European countries and the US when integrated programs emerge.

Political will[3]

The mobilization of a political movement seems to be a primary factor in developing substantive systems change toward integrated services. Italy stands out as a case where a specific social service issue became incorporated into mass political change. In the US the integration of persons with disabilities is part of a general liberal agenda of reform politicians. While substantial advances have been made (Noel and Burke, 1985), the system changes could be characterized as gradual and incremental. Italy's changes were immediate and far-reaching. To its advantage, these changes were institutionalized in national laws. Due to the establishment of these laws, there has been little compromise of integration as political power shifted from the left-wing communist and social democratic parties of the 60s and 70s to the conservative Christian Democratic party of the 80s. As Enrico Montobbio stated to me, 'School integration in Italy is a *fait accompli.*'

The arousal of large-scale public support in Italy against segregation, and subsequently for integration, led to sweeping changes in Italy. In contrast, President Van Weizsäcker stated that the establishment of public support for integration is the major factor needed in order to provide integrated school services in West Germany. Interestingly, in the US and England there is support for integration at a general attitudinal level. At a more operational, practical level there is much debate about the efficacy and dangers of integrated services. This lack of complete attitudinal commitment toward the concept of integration leads to its more gradual adoption as an educational practice.

Charismatic leaders

Active political movements tend to have leaders who can successfully proselytize consumers, professionals, and the general public. In Italy, Basaglia was continually cited as a charismatic professional who influenced countless numbers of persons in moving against segregated services. His combination of scholarly vigor and personal charisma placed him in the vanguard of social change. Similarly, in the United States Lou Brown has been a moving speaker and change agent for integrated school services for students with severe disabilities. Earlier, Marc Gold and Wolf Wolfensberger have appeared as charismatic change agents for vocational and residential services. Interestingly, England has had no charismatic leader to lead integration reforms (Kiernan, 1986). Yet, the highly visible report tends to serve a similar function of influencing the professional and general public around some issue. For example, the Warnock Report (1978) had a major impact on providing educational services to all handicapped students. During my visit I repeatedly heard people referring to the Fish Report as a potential lightning rod for large-scale integration of students with mental handicaps. Thus, the authoritative report may serve a similar function as the charismatic leader for inducing social change.

Model demonstration

When professionals and the public support the general value of integration, but question it at the level of practice, there is a clear need for model demonstration. The public must be shown that a particular educational theory can be successfully put into practice. The US Department of Education has developed extensive networks of special education demonstration projects in the areas of early childhood, integration, transition, etc. People from the immediate region and around the country may then observe how school integration can work safely and effectively. Western Europe has not developed such an extensive network to demonstrate model practice. The Organization for Economic and Cooperative Development has been in the forefront in guiding visitors to different educational programs throughout Europe. In Italy, impressive model programs for integrated education exist in Arrezzo and Parma. In West Germany the Bremen program has high visibility throughout the country. The Oxfordshire program appears to be developing a similar prominence in England. The Brown and Brown (1984) recommendation for the further development of a model demonstration network of integrated services in Europe is certainly appealing.

Instructional technology

Instruction for students with mental handicaps has been dominated by a behaviour analytic model (Gaylord-Ross and Holvoet, 1985). In the US, preservice training programs instruct future teachers in the techniques of reinforcement, cueing, task analysis, and measurement. Rosenberg (1984) has noted that there is poor retention of these behavioral skills by teachers in the field. In the US, one is most likely to observe tight behavioral programming in demonstration programs, university affiliated practicum sites, and segregated schools for behaviorally disordered students. Thus, it was unfortunate, but not surprising, to find little evidence of systematic instruction in the programs I visited throughout Europe (integrated or segregated). As was pointed out above, the absence of behavioral instruction in integrated programs does not capitalize on all of the opportunities for full community integration. For instance, a behaviorally troubled individual who is not brought under stimulus control may not be mainstreamed within regular education classes (Chin-Perez, Hartman, Park, Sacks, Wershing, and Gaylord-Ross, 1986). A student who needs constant adult prompting will not be able to perform independent shopping skills in community stores. Most importantly, students with behavior problems continue to be served in segregated facilities, which is what I sometimes observed within integrated school districts in Italy and England. The full benefits of educational integration occur when a powerful instructional technology combines with ecologically integrated placements (Gaylord-Ross and Peck, 1984). Both the US and European countries have a long way to go in order to obtain this eco-instructional mix.

CONSUMER OPTIONS FOR INTEGRATED PLACEMENT

The status of school integration in a particular country or in a specific school district is perhaps best reflected from the point of view of the consumer. Thus, if a parent of a student with mental handicaps resides in Italy, an integrated school program should be found in their local district. In the US the situation is quite different. In upwards of 50 per cent of the school districts (using the California data) an integrated program should be present in the home district. Yet, for the parent who resides in school districts that provide only segregated services, a different circumstance arises. Even though P.L. 94–142 asserts that the student should attend school in the least restrictive environment, in an all-segregated district the parent must in fact prove that the child would benefit from integrated services. This is usually done through IEP meetings and fair hearings. Typically, parents who fight the hardest and have the most resources get their individual child placed in public school. The point is that in a segregated service district parents have to fight an uphill battle to obtain integrated education for their child. The burden of proof lies on the parents' (and advocates') shoulders even though federal law favors an integrated education model. In contrast, in Italy, education begins in a regular classroom in a public school. From that point the child may demonstrate the need for more restrictive services in a special class (in the public school) or in a segregated school. There is no burden of proof resting on parents to prove the value of integration. At a policy level, then, the Italian law is exemplary. England is somewhat similar to the US in generally calling for integrated education and the parents' right to influence the placement decision. Yet the English law is even weaker than the US law because it has the clause that says integration may not occur if it leads to an inefficient use of resources. This clause is often used in fair hearings to prevent integration. Thus, the English family might have to move to one of the few districts where school integration exists. In

Denmark, West Germany, and Switzerland, there is no strong federal law or policy pushing the case for integration. Local districts are left to determine their own mode of programming. In Germany and Switzerland a parent would have to move to one of the few school districts where integration exists. In Denmark, school integration is more commonplace but parents in a segregated district might have to move or transfer their child to an integrated school district.

SUMMARY

Although a minority of the school districts in four of the five countries I visited have integrated school programs for mentally handicapped students, there is much discussion and potential support for the general value of integration. In order for this general value to be translated into educational practice there needs to be further development of a number of matters. The general public attitude and political will to enact systems change must be expanded. It is more likely that change in these countries will come in an incremental fashion, rather than in the revolutionary manner of Italy. Second, charismatic leaders and publicized reports can play a key role in augmenting the public will towards integration. Third, a network of model demonstration programs is critical in showing consumers, professionals, and the public that integrated education is possible, safe, and an effective way to teach students with mental handicaps. Finally, it is necessary to apply a behavior analytic teaching methodology to maximize the community and social interaction possibilities of integrated education.

Countries in Western Europe, like the United States and others throughout the world, develop educational programs which reflect their own value system. Many well-intended professionals have historically felt that quality programs meant impressive buildings with a specialized program focus ie, segregated education. The state of contemporary special education has evolved to the point where normalized social interactions and community exposure are two of the critical factors in quality education. Educators are increasingly understanding that it is only through placement and systematic programming in integrated settings that such normalization goals can be attained. It will be interesting to see whether, and how a development toward integrated education evolves across the many cultures on our planet.

Footnotes

1. The term mentally handicapped is used extensively throughout the article. This term is commonly used in Europe and is somewhat interchangeable with the term mentally retarded. Mentally handicapped thus covers the wide range of mild, moderate, severe, and profound mental retardation.

2. An integrated school refers to a public school which is primarily composed of nonhandicapped students. The proportion of handicapped students at an integrated school might vary considerably from 0.1 per cent to 30 per cent. Brown *et al.*'s (1983) recommendation of conforming to the natural proportion of handicapped persons in society (1-10 per cent) is a sensible guideline for integrated school programs.

3. I would like to thank Chris Kiernan for the suggestion of this term.

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Vocational Integration for Persons with Mental Handicaps: A Cross-Cultural Perspective

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Descriptive information was presented which related to the vocational integration of persons with mental handicaps in five Western European countries. The investigator based his findings on a five-month visit to Denmark, Great Britain, Italy, Switzerland, and West Germany. Observations, interviews, and documents were synthesized to draw conclusions about employment programs. Inferences were made about the development of vocational models in these countries and the United States. Potential variables were identified which influence systems change toward integrated models of work.

Increasing attention has been recently given to the employment of persons with mental handicaps. The new concept of supported employment asserts that many disabled persons previously believed to be unemployable, may now hold jobs in nonsheltered settings if the proper type of instruction, adaptations, and supervision are provided (Mank & Rhodes, 1986; Rusch & Mithaug, 1980; Wehman, 1981; Will, 1984). Historically, adult rehabilitation services defined those disabled persons as employable who needed normal amounts of ongoing support at work. The individual, often with the help of adaptive devices, was ready to be placed and trained by the employer, with little or no training and follow-along provided by educators. The persons now targeted for supported employment would not have been deemed capable of employment and in fact could not have succeeded at work with such a small support system. The mentally handicapped and other disabled

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individuals engaging in supported employment need educators to teach them specific job tasks and general work behaviors, to perform at an acceptable production rate, to display stamina to work for successive minutes and hours, and to orchestrate social interactions with coworkers. The educator must also conduct job development, counsel the families of the employee, and provide follow-along services with the business and the employee. The person in need of supported work requires all of these services in order to maintain successful employment.

There have been two major types of supported work models for employment. The *individual* placement model puts an individual in a nonsheltered setting. After some initial on-the-job instruction by an educator, as well as follow-along checkups, the person is left to function independently among nonhandicapped coworkers at the business. The *group* supported work model tends to serve persons with fewer work skills. A group of two to six handicapped workers are constantly supervised by an educator. In the enclave group model, a cluster of handicapped workers are employed at a regular business site like a factory. In a crew group model the handicapped workers travel around the community together to do landscape, laundry, or other tasks.

The focus on nonsheltered employment has influenced the kind of vocational training that occurs during the secondary years. Community-referenced instruction has engaged students with mental handicaps in a series of work experiences in real work settings (cf. Gaylord-Ross, Forte, Storey, Gaylord-Ross, & Jameson, 1987). Horner and his colleagues (Horner, Sprague, & Wilcox, 1982) have developed a general case model which attempts to promote the generalization of work skills from the work training settings to the ultimate employment settings (Horner, McDonnell, & Bellamy, 1985).

The supported employment model was initially validated in specific projects throughout the United States (e.g., Champaign, Illinois; Eugene, Oregon; Madison, Wisconsin; Richmond, Virginia; and Seattle, Washington). Next, a national policy was implemented which focused on the transition of handicapped youth to employment (Public Law 98-199; Will, 1984). We are now in the midst of an orchestrated service movement to develop nonsheltered employment options for handicapped adults. The movement is funding a network of model supported employment projects and attempting to shift local funding priorities from sheltered to nonsheltered work options.

It would be useful to take stock of the movement in order to examine its accomplishments and to predict its future course. One way to shed light on a social service movement is to compare its development with similar phenomena in other cultures. The cross-cultural approach helps place your own country's development into perspective. It examines the underlying assumptions of a movement. It often shows the different ways societies adapt to different cultural needs and values. Practically, it may suggest other ways to deal with presenting problems in an emerging movement.

The present research attempted to describe the patterns of vocational integration for mentally handicapped persons in five countries in Western Europe. The countries had differing views on integration, rehabilitation, and employment. The investigation was in no way evaluative, that is, to determine a ranking of superiority in vocational integration. Rather, an effort was first made to describe the different types of employment options and vocational training programs available for mentally handicapped persons in each country. Next, an attempt was made to explain the reasons for the development of particular types of vocational options. An anthropological perspective (Erikson, 1986; Jason & Schwartz, 1976) was taken to understand the emerging program models in terms of an adaptive system whereby values, economic needs, and socialization patterns interact to form particular cultural artifacts. It is easy to slip into value-laden interpretations which one dimensionally evaluate a country in terms of its degree of integration. The anthropological, systems perspective tends to prevent such oversimplification and good-bad judgments. Finally, an attempt is made to identify variables that appear to be prominent in the work integration process. By scanning across the five countries and the United States, a pattern of influential variables in the work integration process may emerge. The study is clearly not a controlled experimental investigation which can isolate variables. Rather, through cross-cultural descriptions, systems explanation, and variable identification, findings may emerge which suggest strategies for our future efforts in supported employment.

INFORMATION GATHERING

Countries

Five countries in Western Europe were selected because of their contrasting approaches to integration and employment. West Germany was suspected to have a strong rehabilitation system, but a more traditional approach toward school and work integration. Switzerland was believed to be similar to West Germany but with a unique (high) employment condition. Denmark was representative of the Scandinavian countries, whose advances in normalized, residential services have been heralded (Nirje, 1970; Wolfensberger, 1972). Great Britain is a nation with a strong research base in developmental disabilities (Tizard, 1978). Italy is a Mediterranean country which is reported to have made major advances in community integration (Basaglia, 1968).

Data Collection

Information was gathered over a five-month period (February–June 1986). Data was simultaneously collected on the school and work integration of persons with mental handicaps in the five countries. The work integration findings are reported here and the school integration results in another manuscript (Gaylord-Ross, in press).

Interviews. There were over 250 interviews conducted in the five countries. About 100 specifically focused on work, about 50 on school, and about 125 covered both topics. Parents, coworkers, and employers were interviewed, but over 90% of the interviews were with professionals (teachers, administrators, counselors, professors).

The interview was conducted in an informal fashion. Specific points about the program at hand were addressed. The person was also asked about their attitude toward the integration of handicapped persons in school, work, and society. Interviews were usually conducted while seated but sometimes while a tour of the facility was being given. The interviews lasted from 5 to 90 minutes. I sometimes took notes during the interview but usually made written recordings of the interview at a later time.

Site visitations. I observed over 75 sites for mentally handicapped persons in the five countries. Of this number, about 40 could be considered related to vocational integration. The sites consisted of sheltered workshops, vocational training schools or programs, and open-industry businesses. The non-sheltered business sites ranged from large factories, to horticulture farms, engineering offices, nursing homes, tool and die plants, etc. Almost all of these business sites were in Italy.

Documents. I procured and read over 500 documents pertaining to integration in the five countries (about 200 specifically related to employment). The documents ranged from program descriptions (fliers, booklets, manuals), to books, journal articles, legislation, and position papers.

DESCRIPTION BY COUNTRIES

West Germany

I spent seven weeks gathering information in West Germany. The country is influenced by memories of the war, both in a general sense, and in its relation to disabled persons. People are quite aware that persons with mental handicaps were sent to concentration camps, medically experimented upon, and exterminated because they were disabled. At the same time, there is a strong social welfare mentality which evolved from the war. The primary concern was to care for war veterans. But this focus expanded and fused with the prevailing post-war political principles of democratic socialism, to include disabled and other disenfranchised people. Thus, a strong rehabilitation system has evolved which has provided ample schooling, housing, equipment, and other services for persons with disabilities. For example, I observed an attractive apartment building in Frankfurt which was built for physically handicapped adults and provided by the government at no cost.

Although ample school services are provided, the programs for students with moderate and severe handicaps are almost exclusively in segregated settings. There are integrated preschool programs in Berlin, Bremen, Heidelberg, and Munich. There are integrated primary programs in Bremen. In spite of isolated programs, there seems to be little coordinated movement toward school integration at the national level.

Specialized vocational training appears to be geared toward the learning handicapped and sensory/physically handicapped. For example, there are many vocational training schools that prepare unemployed youth for specific vocations like woodworking and furniture repair. There is also a model vocational training facility in Heidelberg where physically handicapped persons reside during their two-year course of study.

West Germany has a large and vital network of sheltered workshops. The workshops serve 150 to 300 adults with severe, moderate, mild, and borderline mental retardation. The workshops are quite successful in procuring many subcontracts from companies like Mercedez-Benz. In addition to subcontract work, the workshops have stores and fairs where their products are sold. In contrast to the United States, there seems to be ample work for the participants. I observed many adults working quite rapidly with sophisticated machinery. The director of one workshop stated that all of the persons in the workshop were incapable of work in open industry (nonsheltered sites). Given the rate, accuracy, stamina, and sociability of many of the persons I observed, I must differ with this judgment. In fact, many of the people I observed in sheltered workshops were much more able than many persons being served in supported work programs (cf. Gaylord-Ross, Gaylord-Ross, Hagie, Musante, & Jameson, in press). Although all of the work tends to be completed in the workshop, there have been occasions, for example, Frankfurt, where a group of the workshop members worked as an assembly enclave for a period of time in a factory.

The people involved with sheltered workshops are proud of this system. It is technically impressive, efficiently run, and highly successful in procuring work. In fact, because of the high unemployment in the northern part of the country, some workshops are taking in higher functioning persons who are learning disabled or mentally ill.

A comment should be made about the quota system. West Germany, like many other countries in Europe, legislated a quota system whereby all business organizations above a certain size must employ a minimum percentage (e.g., 8%), of disabled persons in their workforce. This progressive law has failed to meet its target goal because of one provision. The employer may pay a fine of 100 marks per month for every disabled person they were supposed to hire. Employers by and large opt for the fine rather than hire a disabled person. Furthermore, if the business subcontracts to a sheltered workshop, they may subtract the amount of their purchases from their fine. Thus, it may be easier to subcontract to the workshop than take the risks and adaptations that may be incurred in employing handicapped persons.

Switzerland

Only one week was spent in observing school and work programs in Switzerland. Briefly stated, Switzerland seemed quite similar to West Germany in having a segregated school system and sheltered workshop system for persons with moderate and severe handicaps. Again, the workshops were efficiently run and highly productive. One point of interest related to Switzerland should be made. In West Germany and other countries that had an exclusively sheltered workshop system (e.g., Denmark), when persons were asked why there were not nonsheltered employment options, the high unemployment rate (8%-18%) was typically the first and major reason cited. The logic of course went that if nonhandicapped persons were having difficulty finding employment, it would not be possible for handicapped persons to do so (cf. Farber's, 1968, notion of surplus labor). Switzerland has such a low unemployment rate because of its successful businesses (e.g., banks, tourism, and its movement of migrant workers in and out of the country on temporary visas), that high unemployment could not and was not cited as a reason for the lack of nonsheltered work options. The two main reasons cited were satisfaction with their workshop system and the resistance of trade unions to include newly hired disabled persons.

Denmark

Denmark is noted with other Scandinavian countries for originating the notion of normalization in residential services (Bank-Mikkelson, 1968). In fact, I observed a transitional residential program which prepared mentally handicapped persons for independent living and gave youth limited work experiences in nonsheltered businesses. School integration for students with severe handicaps is determined by the local district. Some school districts are completely integrated, some completely segregated, and others have both kinds of programs. There are a number of vocational training schools (segregated and integrated) for learning handicapped, physically handicapped, and sensory handicapped youth.

Persons with moderate and severe mental handicaps almost exclusively go to sheltered workshops. There are workshops that are more production oriented and those which are less so. Although the workshops appear to procure an ample number of contracts, there is a heavy emphasis on social/leisure activities at the workshops. The value of social interactions among handicapped persons is emphasized. There is a quality of life concern related to the fact that many mentally handicapped persons become isolated in their flats and in the community. Thus, the workshop building is used as a base for recreational activities (e.g., plays, camping, boating, parties).

Therefore, although Denmark is quite advanced in normalized residential services, it has not extended the integration concept to nonsheltered work. Professionals are proud of the vocational and recreational experiences emanating from the sheltered workshops. In fact, one educator redefined sheltered work to be "integrated" because it was part of the sequence of real work between manufacturer, subcontractor (the workshop), and the retailer. A rehabilitation counselor told me that when a person could work in a nonsheltered setting he was, by definition, no longer mentally handicapped. Also, it was stated that mentally handicapped persons had worked in regular businesses like assembly lines in the past when there was a shortage of workers. Now, with a substantial unemployment rate, a number of persons stated that nonsheltered employment would not be feasible.

Italy

In many ways Italy is unique in its singular commitment toward integrated school and employment programs for persons with mental handicaps. During the political turbulence of the 1960s and 1970s a strong antisegregation movement emerged within the left-wing revolt. There was a broad consensus among professionals that the institutions and special schools were seriously lacking. The emerging antisegregation movement was a central issue of the political manifestos of the left. Also, the treatment of mentally handicapped and mentally ill persons was closely tied together. Although many persons played important roles, the key leader in the antisegregation movement was the psychiatrist Basaglia. The "movement" resulted in a dramatic closing down of large state hospitals and a conversion to community-based residential facilities. Also, special schools were terminated. At present 80%-95% of moderately and severely handicapped students attend regular schools in districts throughout Italy (special education does not serve mildly handicapped students). There are still some special schools, but as a whole, Italy probably has the most integrated school program for students with mental handicaps in the West.

As part of the anti-segregation, social service activity a strong movement toward nonsheltered work appeared in Northern Italy in the 1970s. Particularly in Parma where Basaglia, Tomassini, Bagnasco, and Raffaella worked within the city's mental health department to develop nonsheltered work options. Similar programs have emerged in Milan, Trento, and Bologna; the most visible program currently being in Genoa with Montobbio and Bianca. The Italian work programs are particularly impressive because they involve an effective coalition of businesses, unions, politicians (particularly the Communist party), and professionals. In contrast to other countries in Europe, there has been reasonable compliance to the quota system. The notion of a quota appears to make businessmen more amenable to approaches from employment agencies for persons with mental handicaps.

Cities like Parma and Genoa have specialized departments within the community mental health system for placing and maintaining mentally handicapped persons in nonsheltered work. The programs have many of the components of a supported work system. There are staff to do job development with businesses, counseling with parents and families, initial training at the work site, and follow-up monitoring with the employer and coworkers.

Individuals have been placed in a wide range of occupations in small and large businesses. Job tasks include cleaning, assembling, food preparation, maintenance, and general factory work. The workers I observed appeared to be in the borderline, mild, and moderate levels of mental retardation. There were also individuals with the dual diagnosis of mental illness and mentally handicapped.

Although the employment programs had many of the components of supported work, it appeared they were not serving individuals with serious vocational handicaps (Gaylord-Ross, Forte, & Gaylord-Ross, 1986). This view is based on the fact that the employment specialist spent little time directly instructing the handicapped worker in the job tasks. That is, the staff person from the employment agency would accompany the handicapped worker to the work site for the first day or week of employment. The worker would be expected to learn the job through observing and working alongside the nonhandicapped coworkers. The employment specialist rarely, if ever, provided direct instruction using the techniques of task analysis, contingent reinforcement, and sequenced prompting. Since almost all of the handicapped workers learned their jobs through rather informal and weak instructional procedures, it can be inferred that their disabilities were not so severe. In our experiences (Gaylord-Ross et al., 1986) and Wehman's (1981) it is necessary for the employment specialist to spend many days or weeks to teach the handicapped employee the job tasks. If such formal instruction did not occur, the employee would never perform the job successfully by merely working alongside the coworkers.

The employment program in Genoa has an attractive feature that is comparable to secondary work experience programs in the United States. In Italy, students complete mandatory schooling between the ages of 14-16. Many of these new graduates are not ready for employment. The Genoa employment program then places these individuals in a series of unpaid work experiences in regular work sites. An instructor is provided at the site to supervise the student worker (similar to the "community classroom" concept of Gaylord-Ross et al., 1986). A variety of different work sites are engaged over a 2-3 year period. At the completion of training, the individual should be prepared for permanent, nonsheltered employment and then turned over to an employment specialist for placement.

The employment programs in Northern Italy also have attractive economic features. First, programs for placing mentally handicapped workers in nonsheltered settings are funded by the local municipality and the European fund. Secondly, and most importantly, these two sources of funds can fund the salary of the handicapped employee for an extended period of time. For example, in Genoa the salary of the handicapped employee is generally covered for the first year of work by program funds. At the end of the year the employer would pay the salary in full. This permits much time for the handicapped worker to learn the job without the pressure of performing up to industrial standards. Third, there is no legal minimum wage during the first year of a trial work period, so that handicapped workers performing well below industrial standards may be paid as low as 40% of the normal worker. The city of Parma has chosen to use its salary stipends to pay for half of the salary of a handicapped worker at both the reduced or regular wage rate. Fourth, when a handicapped worker is earning a substantial income he will lose his invalidity (like social security in the U.S.) benefits. But he will automatically and immediately return to the benefit plan if he loses his job. We are moving toward such a system in the United States, but the possibility of a permanent or extended loss of benefits still leads many families to decide against nonsheltered employment for their children. Overall, the Italian system offers a rich funding base for the employment of adults with mental handicaps.

The outcome data of Italian employment programs is quite impressive. In 1986 each of the programs in Genoa and Parma are serving about 280 mentally handicapped adults. Of that number approximately 120 are receiving partial or full stipend support for their wages and about 160 are fully paid by the employer. This data reflects programs that have been in operation for over 10 years. Furthermore, a study by Barbieri, Oriani, and Palmonari (1983) evaluated the outcomes of the employment programs in Parma and Bologna. A sample of 30 employed workers was examined in each of the cities. The job retention rates were at an extremely high, 95% level. While impressive, they also point to the likelihood that seriously vocationally handicapped persons were not served. For example, Wehman, Hill, Goodall, Cleveland, Brooke and Pentecost (1982) have reported a 67% retention rate in their supported employment program. Another impressive point in the Barbieri et al. (1983) study was the number of times that nonhandicapped coworkers interceded to assist the handicapped worker who was having difficulties at work. This process usually occurred informally but sometimes the union would formally intercede to prevent a termination.

Viewed in total, one must be impressed with the employment programs in Northern Italy. When Enrico Montobbio (personal communication, 1986), the director of the Genoa program, was asked to what he attributes the success of these programs, he gave the single word reply "solidarity." He went on to state that solidarity meant the mutual concern of the Italian people for each other, and their particular care for the less able. This attitude of solidarity may be translated into the willingness of the employer to hire a handicapped worker, the collegiality of the coworkers to support the handicapped employee, and the sentiment of the people and the government to fund employment programs.

An investigator must be cautious not to be taken in by rhetoric and the attempts of professionals to show the best side of their program. Yet, I was quite impressed with the types of placements, the job performance, and the social interactions and attitudes of coworkers in Genoa and Parma. The notion of solidarity could be further investigated in cross-cultural attitude research. Yet, the issue of solidarity and support for integration in work is reflected by the Italian response to high unemployment. In other countries visited, it may be remembered, high unemployment was cited as the main reason that nonsheltered employment was not feasible for mentally handicapped persons. In Northern Italy high unemployment (8%-18%) was cited as the major deterrent to successful placement. Vincenzo Bagnasco pointed out that in 1975, of the mentally handicapped persons served by the Parma mental health department, 60% were in competitive employment, 20% were in sheltered employment, and 20% were in segregated adult day programs. The mid-seventies represented a time of low unemployment and high political interest in the work integration of mentally handicapped persons. In 1985, approximately 30% were in nonsheltered work, 20% in sheltered work, and 50% in adult day programs. There had been a shift in persons from competitive employment to segregated day programs. Bagnasco attributed this move to the high unemployment in the 1980s and the waning of interest in work integration as a pressing social issue in the public's mind. Still, the Italian reaction to high unemployment was an unwavering belief in nonsheltered work with the realization that increased unemployment would lower the rate of placing persons with mental handicaps.

Great Britain

The countries of England, Wales, and Scotland offer an interesting view of employment for persons with mental handicaps. For one, there is very little school integration for students with moderate and severe handicaps. Furthermore, there exist many special schools for students with mild mental retardation. In addition, there are very mixed and strong attitudes about the economic situation in Great Britain. The economic decline of certain regions like Northern England has led to the appearance of the notion of structural unemployment. Structural unemployment states that large numbers of the workforce will be permanently unemployed. Theorists like Cornes (1984) go on to state that we might redefine the notion of work so that social acceptance is not necessarily keyed to occupational success. Persons may receive government support not because they are unemployed but as a life style stipend. The acceptance of permanent high rates of unemployment leads to a certain passivity, particularly with respect to the employment of disenfranchised groups like disabled persons.

Yet, in the midst of notions like structural unemployment, Great Britain has instituted aggressive work "schemes" which attempt to train and place unemployed persons. There is a growing continuing education movement where mentally handicapped persons receive vocational and independent living training at community or technical colleges (Dean & Hegerty, 1984). Yet, there is a degree of skepticism about these work schemes as some feel they are a device to move youth off of the unemployment rolls without a real promise of post-training employment. Although Great Britain had a temporary boom due to the North Sea oil discoveries, and there are pockets of prosperity in the London area, there generally exist the highest rates of unemployment in Western Europe (10%-25%). May and Hughes (1984) have documented the impact of high unemployment on mildly mentally retarded adults in Dundee, Scotland. In a sample of 100 persons, less than 10% were substantially employed. Over 60% were involved in various work training schemes but there was little resulting employment. May stated to me how this 1981 data contrasted to Richardson's (1978) data of the employment of a similar sample in nearby Aberdeen in the early 1970s. Under more prosperous circumstances the Aberdeen sample displayed employment rates in the 70% range. This figure is similar to that of Mithaug, Horiuchi, and Fanning (1985), and other studies of the employment rate of adults with mild mental retardation. Thus, high unemployment in the general society can have a direct negative impact on the rate of unemployment of a disabled population.

Still, not everyone has given up in the face of this economic adversity. A Pathway program was formed in the 1970s in the city of Cardiff, Wales. In the midst of high unemployment, the Pathway program aggressively job developed and provided support to persons with mental handicaps who were placed in open industry. A truly innovative feature of the program is to pay a designated nonhandicapped coworker to provide guidance and assistance to the handicapped worker during his first three months of employment. Mittler (1985) has pointed out how this approach capitalizes on the benefactor relation described by Edgerton (1967). Joan Ryan (personal communication, 1986) told me that this coworker system has proven quite successful in facilitating job maintenance. She further stated to me that the mentor relationship usually continues after the three-month pay period ends and that some coworkers perform the support role while refusing the fee for their services.

The Pathway program has expanded to 20 cities throughout England and Wales. Porterfield and Gathercole (1985) have described other employment schemes for persons with mental handicaps. Thus, although not statutory, there appears to be a healthy growth in employment programs for persons with mental handicaps.

With regard to outcomes, Ryan told me that of 40 persons placed in Manchester, 39 have retained their positions. She further stated that little systematic instruction is provided by the staff member at the work site. As in Italy, the individual learns the job tasks through observation, working, and the loose instruction of the coworker and employment specialist. Although mild, moderate, and severely mentally retarded persons are placed as in Italy, persons with serious vocational handicaps do not appear to have been served. This inference is based on the almost perfect retention rate and the absence of systematic instruction.

CONCLUSIONS

It would seem that a society develops service programs in concordance with its basic system of values. When segregated services are valued, then a sheltered adult work system evolves. When a particular service system has proven to be effective, it is less likely that an alternative service system will evolve. For example, sheltered workshops in West Germany and Switzerland have been technically efficient, economically successful, and served many persons. As members of society point with pride to their sheltered workshop system, it is less likely that an alternative value system of integrated work will be embraced. In contrast, many Italians realized that their segregated system was providing a poor quality of service. In the United States, a growing number of professionals realized that workshops were obtaining fewer work contracts and that almost no persons were being moved on to a less restrictive work setting (Bellamy, Rhodes, Bourbeau, & Mank, 1982). The perception of service problems sets the stage for substantive social change. In the case of Italy, nonsheltered work became incorporated within the sweeping political changes of the 1960s and 1970s. It was not a transient cause, though. Nonsheltered work programs became institutionalized within the local mental health departments of many cities in the north, just as school integration became public policy throughout Italy. In the United States, the goal of nonsheltered work for persons with mental handicaps has emerged during the past five years. With federal impetus, there is a movement toward funding supported employment programs. At this point it is not clear how much the supported employment movement is a temporary social experiment or a substantive change in service delivery. It certainly has not been institutionalized within local service agencies, nor assumed the widespread support of businesses, unions, and political parties, as has been achieved in many cities in the north of Italy.

Thus, a factor called *political will* (C. Kiernan, 1986, personal communication) could play an important role in stimulating the development of nonsheltered work options. In Italy the political will was quite energized, tied to far-reaching political movements, and resulted in concrete institutional changes. In the United States the political will for nonsheltered work is tied to a broad disability coalition which values services in the least restrictive environment. Changes in public policy toward nonsheltered work are likely to be gradual as the checks and balances of political change occur. The 1980s reflect a conservative time in the United States and there is not the public awareness and zest for social change that existed in the 1960s. Yet, the broad coalition of the disability lobby in the United States, which includes many Conservatives and Republicans, may prove to be a long-term strength for the stability of a social change like nonsheltered work. For instance, as the left-wing party lost power and the conservative Christian Democrats ascended to power in Italy in the 1980s, there has been noticeably less governmental support for integrated programs. This approach is partially related to the fact that integration was viewed as a specifically left-wing issue. The broad-based nature of the disability coalition in the United States may make the supported employment movement more impervious to temporary political swings.

The presence of a *charismatic leader(s)* is a second influential variable which can facilitate social change toward integrated work. Basaglia played a galvanizing role in moving Italy toward integrated services for mentally ill and mentally handicapped persons. At present, Montobbio (1985) has the oratorical and writing skills to proselytize the Italian public toward nonsheltered work. In the United States, Marc Gold originally pointed out the vocational potential of mentally handicapped persons through his lectures, films, and publications. More recently, Lou Brown has spoken widely and convincingly to large audiences about the value of supported employment. It appears that countries that have made dramatic political or educational changes have had charismatic leaders to influence public opinion.

The presence of *model demonstration programs* is often closely tied to the presence of charismatic leaders. The notion of an autistic person working competitively in a high production, fast food restaurant (Gaylord-Ross et al., 1986) must often be seen to be believed. If there are no tangible demonstrations of at least one person working in a regular business site, the reader, listener, or public will believe that the idea is radical theory quite divorced from reality. In Italy, Montobbio's employment program has been a highly visible demonstration site, particularly for visitors directed by the Office of Economic and Cooperative Development. In the United States there have been many demonstration sites for supported employment: Brown's in Madison, Wisconsin; the Connis, Sowers, and Thompson food service program at the University of Washington; and the Wehman and Hill program in Richmond, Virginia. In the process of systems change, local administrators are usually quite conservative in adopting a new and risky program model. They often need to be assured that the program has been tried and validated. An administrator's attitude may often be changed through visiting the program, observing audio-visual media of it, or reading documents describing it. The U.S. Department of Education has intentionally established a network of transition and supported employment programs to provide the templates for future model replication. In England and Wales, the numerous Pathway programs could provide a similar dissemination vehicle.

Another variable influencing the development of work integration is the level of *instructional technology* among staff. Nonsheltered employment places stringent demands on handicapped workers in terms of response accuracy, rate, duration, and other behavioral parameters. Persons with serious vocational handicaps are not likely to learn and maintain job skills without the careful instructional techniques of task analysis, contingent reinforcement, prompting, and adaptive devices (cf. Bellamy, Horner, & Inman, 1979; Connis, Sowers, & Thompson, 1978). The many employment programs in Europe and the United States which do not use systematic instruction are probably serving an easier-to-place clientele. If systematic instruction was used to teach job tasks and to manage problem behaviors, a more challenging population of handicapped persons could be employed in nonsheltered settings.

The *economic state* of a country is another factor which appears to affect the development of nonsheltered employment. The rate of unemployment in most countries in Europe has been high during the 1980s. Professionals readily cite the impact of high unemployment in one of two possible ways. In countries with little or no nonsheltered employment options, high unemployment is given as a rationalization for the absence of nonsheltered employment. In a country like Italy where there is substantial nonsheltered work, high unemployment is still cited as the major factor which undercuts placement efforts.

In more recent years the unemployment rate in the United States has dropped to a 7% level, which is much lower than the rate in most countries in Europe. Still, O'Brien and Stern (1987) have pointed out that unemployment above the 4% level will produce competition among workers for a limited number of jobs. Also, there are many pockets of high unemployment in the United States where rates may range from 20%-40%. In Europe, quotas and subsidized wages have been used to induce employers to hire handicapped workers. These approaches are generally not acceptable in the United States. Tax credits and short-term subsidies have been used here with some success. There appears to be an increase in the use of subminimum wage certifications through the Departments of Labor which permits low production workers to be paid and maintain benefits as if they were in a sheltered workshop. This is somewhat parallel to the sheltered placement program in Great Britain which permits an employer to pay a handicapped employee as little as 30% of a regular employee when his production rate is that low. Then, the government pays the individual the remaining 70% of the wage (or 50% if the worker is producing at a 50% rate). Finally, some professionals in the United States like Brown et al. (1984) are experimenting with a pay waiver where extremely low producing, handicapped workers (e.g., less than 1%), are not paid at all. In fact, they are volunteer workers. The approach emphasizes the primary value of nonsheltered work as being an age-appropriate socialization experience (see Bellamy et al., 1984, for an opposing view).

The main motivation of all these approaches has been to offer economic incentives so that handicapped persons may gain entry to regular work settings. Once employment is established, there has been reasonable success in maintaining handicapped employees in the workplace (Wehman et al., 1982). In fact, we have experienced employers requesting more handicapped workers subsequent to initial successful placements (Gaylord-Ross et al., 1986). Furthermore, even in the midst of substantial unemployment, employers still report the shortage of employees with good general work behaviors. Cornes (personal communication, 1986) has stated the need and effectiveness of aggressive employment programs in the face of poor economic circumstances like that which prevail in Great Britain. Interestingly, Halpern (1973) has shown that effective employment programs can successfully place and retain mentally handicapped persons in times of high unemployment.

SUMMARY

Nonsheltered employment for persons with mental handicaps is likely to continue and expand in countries which have effective placement and training programs, viz., Italy, Great Britain, and the United States. Although the initial impetus for such programs may emerge from a political movement, with charismatic leaders and demonstration sites, the durability of such programs will depend upon their institutionalization in policy regulations. Such legislation may include economic incentives for employers, quotas or affirmative action policies, and statutory funding for employment agencies. Each country will forge its own approach according to its own local circumstances. Ultimately, the acceptance of mentally handicapped persons in the workplace will depend on an attitudinal shift in employers, coworkers, and the general public. Voeltz's (1980, 1982) work has shown that nonhandicapped students having systematic school contact with severely disabled students shift their attitudes towards the latter in a more positive, acceptant direction. It is possible that future research will show similar attitudinal shifts so that employers and coworkers become more acceptant of handicapped employees as a function of contact on the job. When there is widespread public support for nonsheltered work, the cultural solidarity for disabled workers should counter the economic vicissitudes of unemployment.

It is not clear whether countries with entrenched sheltered work systems will shift toward nonsheltered employment. In general, educational innovations from the United States have been communicated to European countries through media, professional meetings, and international organizations like O.E.C.D. At the school level, integration is gradually influencing countries with segregated educational models (Gaylord-Ross, in press). Countries like Denmark, Switzerland, and West Germany are giving increasing attention to the transition from school to work (Bernath & Kayser, 1984). It is possible that integrated work options will emerge from such efforts. The limitations of forecasting the future have been discussed by Cornes (1984) and Bell (1974). They point to the multidimensional forces that limit economic and policy forecasting. At the same time, Cornes (personal communication, 1986) calls for the application of aggressive interventions in the face of uncertain forecasting. Similarly, the placement of mentally handicapped persons in "open industry" will always be, as Bagnasco told me, a "fragile" endeavor. Yet, there are validated placement and training methodologies (e.g., Whelan & Speake, 1981) which may be successfully applied within those nations with the political will to employ substantial numbers of mentally handicapped persons in open industry.

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INTRODUCTION TO SUPPORTED EMPLOYMENT ISSUES

Robert Gaylord-Ross

In:

Supported Employment Models, Methods, and Issues

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Supported employment is in its second decade of operation since the founding University of Washington Food Service Program (Connis, Sowers, & Thompson, 1978). The first phase of supported employment demonstrated that persons with more severe disabilities could be successfully employed in nonsheltered settings. Concurrent with these demonstrations, a political movement emerged which advocated for the expansion of supported employment programs throughout the nation. Indications of this movement were the passage of the federal transition initiation (98-199) in 1985 and the supported employment amendment to the Vocational Rehabilitation Act in 1986. Although advocacy rhetoric and bandwagon demonstration is probably necessary for the advancement of a political movement, it appears that we may be entering a more sober phase in the history of supported employment. Larger data bases are emerging from regional and state efforts. As supported employment obtains a more statutory status, investigators may wear their scientific coat more often than their advocacy one. The chapters in this book in general, and in this issues section in particular, reflect this attempt to objectively appraise the accomplishments and shortfalls of supported employment. The authors address broad issues of policy and economics, as well as more practical matters of improving the technology of supported employment programs. Thus, the chapters offer a nice balance of appraising the past while forecasting the future.

Economics

As an aggregate of supported employment programs appears, economists may begin to index outcome data in terms of its costs and benefits to society, and his task is no easy matter. Although costs may be more objectively determined, is is not always clear how they are absorbed across different agencies. Estimating benefits may easily entrap the investigator in a quagmire. Monetary benefits to what people or agencies? Quality of life advantages to whom?

The authors in this volume present a lucid and informative presentation of benefit-cost factors in supported employment. Walls, Dowler, and Fullmer (Chapter 15) present a clear explanation of price indexing. They portray the consumer as a rational being who will formulate fiscal matters to determine whether it makes economic sense to work or remain unemployed. They make a convincing case that when economic forces are favorable for the individual, people will choose to work. It might be pointed out that Halpern (1973) showed that even in undesirable circumstances, rehabilitation programs can place individuals into competitive employment.

The Conley and Noble piece (Chapter 16) is a true tour de force because of their precise exposition and their analysis of the State of Illinois data base. They point out that their current analyses of supported employment costs are not as sanguine as originally proposed. It appears that as programs attain longevity their costs are reduced in terms of level of supervision and other cost-cutting measures (e.g., space rental mentioned by Parent & Hill, Chapter 19). It seems that economists like Conley and Noble will have to integrate consumers and societal based estimates of benefit/costs.

The Dynamics of Working

From a client-based perspective, the Lagomarcino piece (Chapter 18) is both telling and provocative. An ongoing question in vocation special education has been what are the main causes of job termination? Again, in analyzing a state-wide survey from Illinois, Lagomarcino offers the field its largest data base to date for grasping factors contributing to job separation. In the past, surveys have reported and interpreted their findings as a contrast between job production (accuracy, rate, duration) and social skills factors (interaction, role-following, outbursts, conduct). Although most studies empirically reported a relative equal presence of these two factors, investigators emphasized social factors in their conclusions and recommendations. Lagomarcino advances a new factor, job responsibility and the lack thereof, as being the primary cause for job terminations. Job responsibility suggests commitment to job and is reflected in poor attendance, poor work attitudes, or lack of work motivation. Job responsibility accounted for 17% of separations whereas task production had 12% and social skills 10% of all terminations. Thus, motivation is a variable that must receive increasing attention. Lagomarcino points out that individuals leaving sheltered workshops rarely choose competitive employment and often suffer "peer group displacement." Yet, Jones (1989) recently found that the quality of work life improved for developmentally disabled adults who moved from sheltered to supported employment.

Persons may also lack work motivation because there is a poor match between the ecological work demands and the individual's preferences and abilities (Calkins & Walker, 1989). Practitioners and researcher thus need to further explore job selection, work reinforcement, and job accommodation variables. When examining these variables certain interesting relationships appear. For example, almost all jobs for persons with developmental disabilities have been simple, repetitive entry level positions. The lack of intrinsic reinforcement in these jobs appears to more directly effect persons with mild disabilities. Wehman et al. (1982) has shown that persons with more severe disabilities are terminated for external reasons like economic lay offs. Mildly disabled persons are terminated for internal variables of their own doing, e.g., motivation and social skills. Also, severely disabled persons have lower rates of termination.

These facts might lead us to draw certain tentative conclusions. First, motivational and job matching variables ought to receive more attention, especially for those persons with mild disabilities. Although Mank, Buckley, and Rhodes (Chapter 17) are rightfully concerned that 85% of those receiving supported employment are in the mild/moderate level, it is in fact this group that has perhaps the highest termination rates. Perhaps the mild group is over-served in some cases with job coaching services (Mank et al.), yet they might need more off-site counseling and assessment services. Similarly, the more time consuming on-site services might be better deployed in placing and training more persons with severe disabilities.

The Future

Whitehead (Chapter 20) optimistically points to the many employment opportunities for disabled persons in the future. In spite of the growth in technological professions, there will be numerous lesser skilled positions embedded within technical settings. As well as in related service industries. Already, a number of industries have targeted senior citizens and disabled persons to fill a number of positions, particularly those that are part-time and those having a high turnover.

Ultimately though, supported employment will only expand if becomes statutory and engenders the political will of the populace (Gaylord-Ross, 1987). Although Mank et al. report of the innovative state initiatives to institutionalize supported employment, they state that only 10% of developmentally disabled adults are accessing this service. This 10% figure is even more dismal when one considers that it does not include the many individuals on waiting lists for adult services. This waiting list phenomenon is one that potentially undercuts the benefit-cost analyses which compare supported employment to some alternative segregated program. Although Conley and Noble believe that some type of program is the norm, Halloran and Ward (1990) report otherwise, with growing waiting lists for adult services.

We will only find ourselves out of this economic morass by generating creative solutions. Parent and Hill suggest one in redefining the supported employee as one who "pays" for his vocational services through social security adjustments. Although current benefit/cost analyses may show increasing gains, often these economic benefits do not flow back to the individual program. Johnson (Chapter 21) reports that supported employment professionals responding to a survey state that their greatest concern is continued and adequate resources to fund their programs. Shoe-string program budgets lead to low paid job coaches with 47% turnover rates (Johnson). Creative fiscal solutions will permit benefit monies (tax contributions, lower SSI payment) to flow back to vocational programs, perhaps through a client voucher (Gaylord-Ross, 1990).

Supported employment is a program model which works. As this book well documents, disabled persons can be successfully employed in nonsheltered work settings, with fiscal and lifestyle benefits subsequently occurring. The universal appearance of supported employment is likely to be dependent on forces larger than this profession. The larger society must express a political will to fund social programs in general and supported employment in particular. Ironically, supported employment emerged in the politically conservative 1980's when program cutbacks were commonplace. Yet, nations in both the East and West are currently experimenting with admixtures of capitalism and socialism; attempting to maximize business gains while advancing principles of social justice for its citizens. International integrated economies have led to both progressive joint ventures (e.g., Toyota-GM, technology exchange), as well as offshore competition which depletes and deskills employment opportunities. Disabled persons can play a critical role in business and service ventures. The motivation of clients and corporation appear to be crucial in the unfolding of this vision.

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THE TRANSITION STATUS OF STUDENTS IN SECONDARY SPECIAL EDUCATION

An Overview of the National Longitudinal Transition Study Initial Findings*

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In the 1983 Amendments to the Education of the Handicapped Act (EHA) Congress mandated the U.S. Department of Education to conduct a longitudinal study to examine the educational progress of handicapped students in special education and their occupational, educational and independent living status after graduating/leaving secondary school. Since the Act was seven years old Congress was interested in looking beyond evaluating the progress of the Act's implementation and toward refocusing the evaluation on the impact of the law on children, youth and their families. As youth with disabilities aged and moved through the school system, services and outcomes associated with the transitional period from secondary school to postsecondary education and training and work became of greater interest to parents, educators, advocates and policy-makers. It was recognized that while the transitional period was one of the most challenging times in any young adult's life, for many youth with handicaps it was even more challenging.

The Congressional record cited studies and testimony attesting to the importance of the transitional period and the need to strengthen transition programs for youth with disabilities. A 1981 GAO Report was cited that found secondary age and 18-21 year old students with disabilities to be underserved while in school (GAO Report, 1981). Alarming levels of unemployment were cited from several state level studies of special education graduates (Hasazi, Gordon & Roe, 1985; Mithaug & Horiuchi, 1983). Witnesses suggested that secondary education structure the transition from school to work and adult life and that the Federal government assume a leadership role in addressing the needs of handicapped youth (Testimony, Senate Subcommittee on the Handicapped, 1983). National data was needed to establish a benchmark against which to measure the progress of schools and other services in educating and training youth with disabilities for the roles and responsibilities of adult life.

In 1983 Congress responded to the needs of secondary age youth with handicaps with the Secondary Education and Transition Services Initiative. As one of a number of amendments addressing the transitional needs of youth with handicaps, a national longitudinal study was authorized to evaluate the impact of secondary and transition programs for youth. The study was to include a representative sample of youth from all the federal handicapping conditions. The study was to examine the educational progress of students while in school and their status after leaving secondary school. Their status was to be examined at regular intervals for a minimum five year period after leaving secondary school.

How Was the National Longitudinal Transition Study Conducted?

In 1984 the Office of Special Education Programs (OSEP) of the U.S. Department of Education contracted with SRI International to develop a study design and select the sample for the National Longitudinal Transition Study (NLTS) of secondary students in special education. The study was designed to provide information on youth's secondary school programs, related services, social experiences, educational achievements in secondary school and postsecondary education, employment experiences and other productive activities and independent living skills and experiences. The nationally representative sample of youth and young adults between the ages of 15 and 26 [1] representing each of the 11 federal handicapping conditions was chosen.[2] The study participants came from 300 school districts representing the geographical regions of the country and districts of differing wealth and enrollment size.

Under a second contract, SRI began data collection in 1987. A variety of means of collecting information were used including a telephone interview with parents, a survey of the students' schools, and a review of the students' records. Parents were interviewed by telephone during the summer of 1987 to obtain information on family background and expectations for the youth in the sample, characteristics of the youth, experiences with social services, the youth's educational attainment (including postsecondary education), employment experiences, social and independent living experiences.

Schools that were attended in the 1986-87 school year by youth in the sample were surveyed at the end of 1987 for information on student enrollment, staffing, programs and related services offered secondary special education students, policies affecting special education programs and students and community resources for disabled persons. School records of students in the study were also reviewed by researchers for the last year that they were in secondary school. Information on the student's disability classification, type of program and services received, attendance and school completion status was recorded. Detailed information was taken on the student's classes for the previous school year, 1986-87 (or 1985-86 if the participant was not in school for 1986-87).

Findings were based on data on more than 8000 youth.[3] At the time of data collection about two thirds of the youth were still in secondary school. Of the remainder, about half had been out of school a few months (1986-87 graduates and age-outs) to one year (dropouts during 1986-87) and half had been out of school between one (1985-86 graduates and age-outs) and two years (dropouts during 1985-86).

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[1] States have various age limits for school attendance. All but the State of Michigan, which has an age limit of 25, have age limits of 22 or less.

[2] Data on youth in the deaf/blind category are not included when the subsample size becomes too small for reliable statistical analysis.

[3] Sample was weighted for disability and SES factors.

What Are the Individual Characteristics of Youth with Disabilities?

The data from this study provided a detailed picture of who made up the population of youth with disabilities in special education. These youth differed from youth as a whole in several respects other than the presence of a disability.

Youth with disabilities were disproportionately male; 69% of students in special education were male. Males comprise 50% of the comparable nondisabled age group in the population (Center for Educational Statistics, 1987). This disproportionality was especially the case for youth with learning disabilities (73% of learning disabled students were male), emotional disturbances (76%) and multiple handicaps (65%).

Unlike most nondisabled youth who leave school at age 18, there were more youth in special education who were older. Ten percent of all students in special education are 19 or older.

Black students were overrepresented in all the categories of disability in special education. While black students made up about 12% of the nondisabled student population (Center for Educational Statistics, 1987), 24% of students in special education were black and over 30% of students in the category of mentally retarded were black. On the other hand, there were fewer white students in special education (64% of students in special education were white) than in the nondisabled student population (70%) (Center for Educational Statistics, 1987). Hispanics were also underrepresented in special education with 9% in special education but 13% in the nondisabled student population (Center for Educational Statistics, 1987). For youth out of school one to two years, the ethnic ratios remained about the same.

The IQs of students in special education were all within the normal range, however, students with mild disabilities were still below 100 (for students classified as learning disabled (91), emotionally disturbed (91), speech impaired (92), deaf (93) hearing impaired (93), and visually impaired (91)) except those who were classified as mentally retarded, multiply handicapped and deaf/blind (averaging 58, 56 and 60, respectively).

What Are the Self-Care and Functional Skills of Youth with Disabilities?

The functional level of youth with disabilities provides descriptive information about youth and the capabilities they have with which to approach postsecondary education, employment and independent living. The NLTS asked parents to rate youth's ability to perform a number of self care and higher level functional skills. The self-care skills that were rated were dressing, feeding and getting around to places within the individual's neighborhood. Higher level functional skills included looking up telephone numbers and using the phone, telling time on a clock with hands, reading common signs and counting change. Parents rated youth on how they performed each task on their own without help on a four point scale from "not at all well", "not very well", "pretty well" to "very well".

Basic self-care skills were mastered by most mildly disabled youth while in secondary school. Over 90% of youth in learning disabled, emotionally disturbed, speech impaired and hearing impaired categories had no difficulty with these skills performing "very well" according to parents. Over 90% of youth with deafness were rated as performing "very well" to "pretty well" on all skills while youth with mental retardation, visual impairments and other health impairments were rated "very well" to "pretty well" in self-care skills except for being able to get around in the neighborhood. Only students who were multiply handicapped and deaf/blind had more difficulty with all self-care skills.

The higher level functional skills presented more difficulty than self-care skills for all youth with disabilities with fewer performing "very well" on all tasks. Being able to look up telephone numbers and use the telephone presented the greatest difficulty for youth in all disability categories. Over 90% of youth with learning disabilities were able to perform all functional living skills "very well" to "pretty well". Over 90% of youth with emotional disturbances, speech impairments, deafness, and hearing impairments performed "very well" to "pretty well" on all but the telephone skills. Youth with orthopedic, other health impairments had more difficulty with these skills. Mentally retarded, visually impaired youth had considerably more difficulty and multiply handicapped including deaf/blind youth had the most difficulty. There was little change in the basic care and functional skills between school and one year out of school except for youth with mental retardation who showed consistent improvement in these skills over time.

What Are the Family Characteristics of Youth with Disabilities?

Certain economic and family structures have been associated with educational achievement in school and later success in adult roles. Youth who are from families with low household incomes, a single parent or whose head has relatively little education are more likely to do poorly in school, drop out of school, enter the criminal justice system or be unemployed, underemployed, or poorly paid. Students in special education in the NLTS were more likely than students as a whole to come from low income families, from single parent families or from families with heads of household with relatively less education. These factors were not disability specific. Thirty seven percent of all special education students came from single parent families, whereas, 30% of non-disabled students came from single parent families (U.S. Bureau of the Census, 1988). Sixty eight percent of special education students were from households with 1986 incomes of less than $25,000 per year, while 55% of non-disabled students came from such households (U.S. Bureau of the Census, 1987). The number of special education students from families with the head of the household who had not graduated from high school was 41% while 31% (Center for Educational Statistics, 1987) was the comparable figure for heads of household for non-disabled students.

While students in regular education are more typically from suburban areas (48% suburban, 22% urban, 29% rural), students in special education were also more likely to come from urban (32%) or rural areas (35%) rather than suburban (34% suburban) areas.

In What Types of Special Education Programs Are Students Placed?

In examining the secondary school experiences of youth in transition, a number of aspects of the school program are of interest. The NLTS examined the following aspects of the students' program:

- rates of classification into special education,
- type of school attended,
- involvement in regular education courses,
- enrollment in vocational education courses,
- nature of related services for special education students.

Handicapped Classification

Over half of the students in special education were classified by their school or school district as learning disabled (58%). Students with mental retardation accounted for 23% of the special education population. Those with emotional disturbances or behavioral disorders were about 10% of the special education population. The remainder of students were classified as having low incidence disabilities (speech impaired, hearing impaired, deaf, visually impaired, orthopedically impaired, other health impaired, multiply handicapped and deaf/blind) and totalled about 10% of the total special education population.

Since special education students may remain in secondary school until they reach the maximum age for attendance in their State, there are more students that are 19 years and older still in secondary school special education programs. While some students in all disability categories remain in school longer, this option is used in particular by mentally retarded, visually impaired, hearing impaired, deaf, deaf/blind and multiply handicapped students.

Schools Attended

Programs for students in special education may be offered at regular high schools or in special schools for students with disabilities. Most students in special education attended regular high schools whose student bodies were primarily non-disabled. However, students with certain disability classifications were more likely than others to attend separate special education schools. Special schools were attended primarily by students with low incidence disabilities. The majority of students who were deaf/blind (94% of all deaf/blind students) and deaf (63%) attended special schools. Students who were multiply handicapped (41% of all multiply handicapped students) and visually impaired (35%) also attended special schools at a higher rate than students with other disabilities. Students with learning disabilities and speech impairments were very unlikely to attend a special school and typically attended regular high schools.

Mainstreaming In Regular Education

The extent to which youth were enrolled in completely self-contained special education programs within a regular high school also varied greatly by disability classification. Seventy percent of deaf/blind and multiply handicapped students were in self-contained programs. Mentally retarded (32% of mentally retarded students attending regular high schools), deaf (34%), orthopedically impaired (28%) and other health impaired (27%) students also were placed in special education programs without any regular education classes.

Mainstreaming into nonacademic courses only was the most common program for students with mental retardation (42%). Students with learning disabilities (54% of students with learning disabilities attending regular high schools), emotional disturbances (48%), speech impairments (45%), visual impairments (50%) and hearing impairments (50%) were mainstreamed into some academic subjects but also took some special education classes. Students with speech impairments (26% of students with speech impairments attending regular high schools), visual impairments (29%) and other health impairments (26%) were the most likely to be enrolled entirely in regular education courses.

Each year some youth in special education are determined to no longer need special education services. The rate of return to regular education varied widely according to the disability, ranging from no returns for all deaf/blind students to a high of 18% of all students with speech impairments. Students with mental retardation (1.4% of all students with mental retardation), deafness (.3%), deaf/blindness (0%) and multiple handicaps (0.2%) were very unlikely to have their special education status changed and remained in special education throughout secondary school. Other groups averaged about 5% return to regular education.

Vocational Education Participation

The participation in vocational education during the previous school year for students in special education averaged between 50% and 60% for most categories with the exception of three categories. Students with multiple handicaps (40%) were the least likely to have taken a vocational education course during their last year in school. The most likely students to be enrolled in vocational education courses were students with mental retardation (66%) and deafness (77%).

Rates of participation in vocational education steadily increased from grade level to grade level. Among students with disabilities in seventh and eighth grade the rate of enrollment was 51%. This increased to 71% for students in ninth grade and 86% for students in eleventh and twelfth grade. For special education students in vocational education classes, the number of hours per week in class also increased from the earlier grades to the last years in secondary school from an average of one hour per week in seventh and eighth grade to five hours per week in ninth and nine hours in twelfth grade.

Support Services

Support services are intended to help students benefit from their education program. Such services include speech and language therapy, personal counseling, life skills training, tutoring, mobility training, hearing loss therapy and transportation training. Support services may be provided as part of the special education program or by other sources in the community. Both parent report and student records provided information on the services special education students received in the most recent year.

The majority of students in all classifications except learning disabled and emotionally disturbed received some additional support services. The type of service received was associated with the type of disability and needs of the student. Life skills training was the most commonly reported service particularly for students with mental retardation (37% of all students with mental retardation), deafness (39%), deaf/blindness (41%) and multiple handicaps (41%).

Schools clearly were the primary source for support services for youth with disabilities. Only personal counseling for emotionally disturbed students and interpreters for deaf students were provided by other sources when the student did not receive them from their school.

How Do Special Education Students Leave School?

There are three ways that secondary school students in special education leave or exit school. As do students in regular education, youth in special education graduate receiving a diploma (or certificate of completion) or they drop out. Special education students also leave school by "aging-out" because they have reached the maximum age for school attendance set by state law.

The NLTS sample used for examining the reasons for leaving school was composed of students who exited school in 1985-86 or 1986-87. The NLTS data on school completion status is based on school records and parent reports.

The commonly accepted annual graduation rate for students in regular education is around 75% and the dropout rate is about 25%

(U.S. Bureau of the Census, 1985). Special education students graduate at a rate of 56%, the drop out rate is 36% and the age out rate is 8%. However, the school completion picture is much more varied for students in special education depending upon the type of disability of the student.

Who Graduates from Special Education?

Only students with visual impairments (70%), hearing impairments (72%), deafness (72%) and orthopedic impairments (77%) graduated at rates similar to students in regular education. Students in these same groups also stayed in school, with dropout rates between 12% and 17%. All other groups of special education students graduated at rates below that of regular education students with students with mental retardation (50%), emotional disturbances (42%) deaf/blindness (43%) and multiple handicaps (32%) graduating with rates at or below 50%.

There are several kinds of diplomas or certificates that a special education student may receive upon graduation: a regular diploma, special diploma or certificate of completion. Students with milder disabilities were more likely to receive a regular diploma. Three groups of students received the special diploma or certificate of completion. Only about half of the students with mental retardation (52% of mentally retarded students who graduate) and multiple handicaps (55%) graduate with regular diplomas. Either the special diploma or certificate of completion in nearly equal proportions was received by students in these two categories. Less than 2% of students with deaf/blindness receive regular diplomas, with the majority typically receiving a certificate of completion.

Who Drops Out?

The dropout rate for many categories of special education students was higher than for students in regular education. The most dramatic finding was that over half of the students with emotional disturbances (55%) who left school in school years 1985-86 an 1986-87 did so by dropping out of school. According to parents' reports, students with emotional disturbances dropped out because they didn't like school, because of behavior problems and because of poor grades. Students with emotional disturbances were the most likely group to have had behavior problems contribute to their dropping out of school. Students with learning disabilities (36% of all students during the 1985-86 and 1986-87 school year), mental retardation (34%) and speech impairments (33%) also had dropout rates higher than students in regular education. These figures compare to dropout rates that range from 31% for mildly disabled youth in Florida (Fardig et al., 1985) and 34% in Vermont (Hasazi, Gordon & Roe, 1985) to 40% in New Hampshire (Lichtenstein, 1988). In urban districts rates as high as 47 (Levin, Zigmond & Birch, 1985), 50% (Edgar, 1987) and 53% (Zigmond & Thornton, 1985) have been reported for learning disabled youth.

NLTS analysis of the data indicated many factors associated with dropping out that are similar for students in special and regular education. Like students in regular education, most of the dropping out occurred in the first years of secondary school (grades 9 & 10), and behavior problems, poor attendance and failing grades were antecedents to dropping out. Socioeconomic status measured by household income and head of household education was strongly related to the dropout rate for nondisabled and disabled youth. The lower the household income and education of the head of the household, the greater the likelihood the student would drop out of school. Forty-two percent of special education exiters who dropped out came from households with an annual income of less than $12,000. Forty-four percent of the students in special education who dropped out were from households whose head had not graduated from high school. Unlike students in regular education, however, dropping out was not associated with the special education student's ethnic background or gender.

Who Ages Out?

Students who age out are those who leave school upon reaching the maximum age for attendance and who have not graduated. The option in many states exists for students to continue to attend school until the age of 20-22 (depending upon each state's law and age 26 for one state). Students who age out are typically older than regular education students when they leave school. While some students in all special education categories remained in school until they aged out there were several groups of special education students that used this option to a greater degree. Students who were deaf/blind (49% of the students who exited school in 1985-86 and 1986-87) and multiply handicapped (50%) aged out to a far greater extent than any other group. Students who were mentally retarded (17%), deaf (16%), visually impaired (14%) and hearing impaired (12%) aged out less often.

What Are Youths Who Were In Special Education Doing After Leaving School?

The NLTS examined the extent to which youth with disabilities were involved in productive activities after leaving secondary school. Youth were considered to be engaged in productive activity if at the minimum sometime during the previous 12 months they:

*took a course(s) from any postsecondary educational institution (trade or vocational school or 2-year or 4-year college), or
*were working for pay competitively, or
*were working for pay in a sheltered work program, or
*were engaged in a volunteer job or unpaid work, or
*received job skills training from someone other than a family member, or
*were a female who was married or involved in raising children.

Youths with disabilities who had been out of secondary school between one and two years and were not institutionalized were included in the sample. The information was based on parent reports of the youth's activities.

The study found that 69% of these youths had been engaged in some sort of productive activity during the previous year. Of those that were productively engaged, most were employed or taking some postsecondary course(s).

A significantly large percentage of these youth, 31%, however, had not been engaged in any productive activity at any time during the last twelve months.

The level of engagement varied considerably between different disability categories with the majority of some groups not being involved in any of the productive activities of adulthood.

Youth most likely to be engaged were those with learning disabilities (81% of non-institutionalized learning disabled youth out of school one to two years), deafness (84%), hearing impairments (81%), and speech impairments (81%). Still, approximately 20% of these youth were not productively involved in the activities of adulthood. The level of productive engagement fell below 50% for youth in the mentally retarded, multiply handicapped and deaf/blind categories. Research has shown that even severely handicapped youth can usefully be involved in vocational programs and supported employment (Brown et al., 1983; Wehman & Hill, 1981). There is no disability-related explanation why 50% of youth with severe impairments would spend 12 months without engaging in any type of productive adult activity.

Employment Experiences of Youth in Transition

Paid competitive employment is a desireable and expected goal for all youth as they reach adulthood. Secondary special education has an important role in preparing youth with disabilities for the world of work (Will, 1984). Research has shown that more individuals with disabilities can be productively employed than was once thought if appropriate training and support services are provided (Benz & Halpern, 1987; Rusch, 1986; Wehman, 1981). Other research has shown that students with disabilities who have paid jobs during secondary school have a much better chance of having paid employment after leaving school (Hasazi, Gordon & Roe, 1985).

Based on parent reports youth were categorized as being employed full time, part time, in work study or in a sheltered workshop program. Information on types of jobs and wages was also obtained.

How Are Special Education Students Employed While In Secondary School?

The rate of employment for students in regular education was 44% (October, 1985, Bureau of Labor Statistics, 1986). While the average rate of employment for youth in special education was 42%

(Summer, 1987, NLTS) [4], employment rates varied for different disability categories. Students classified as learning disabled (47% of learning disabled students in secondary school) had the highest rate of employment while in school. Students classified as emotionally disturbed (44%), hearing impaired (44%) and deaf (42%) had similar employment rates. Students who were orthopedically impaired (19%) were employed the least. Most of the special education students who were employed while in school were employed part time. Students with mental retardation (14% of students with mental retardation in secondary school), visual impairments (14%) and deafness (15%) were employed in work study jobs more often than students in other disability categories. Employment in sheltered workshops was used very little for students still in school.

How Much Are Students Paid?

For the special education students in paid employment, the average wage was $3.48. Many groups of students had average rates of pay below the $3.35 minimum wage (visually impaired, hearing impaired, speech impaired, health impaired, mentally retarded and multiply handicapped).

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[4] Comparisons between NLTS data and other studies of nondisabled youth are not ideal because data collection has occurred at different times during the year and during different years. The employment data for regular education students was collected in October 1985 (U.S. Bureau of Labor Statistics, 1986), and for special education in the summer of 1987. The summer employment figures for special education students may increase the number of students employed to more than would be expected during the school year. Summer employment figures may also reduce the number of special education students that would be involved in work study during the school year. Comparative data for nondisabled out-of-school youth age 16 to 21 was collected in 1981 (Borus, 1984). The NLTS sample of out-of-school youth with disabilities had either graduated or aged out with the class of 1985-86 or had dropped out of that class during that year.

What Types of Jobs Do Students Do?

Employed secondary students in special education were most likely to work at lawn work or odd jobs (18%), in food service (17%), childcare or baby sitting (12%) or other manual labor (30%). Students with visual impairments, orthopedic impairments, health impairments and deafness were more likely than others to have office jobs.

What Are the Employment Outcomes for Youth Out of School?

Several studies have examined employment rates for special education graduates. The employment status of youth with disabilities has been studied in Colorado and Washington with employment rates reaching 60% (Mithaug & Horiuchi, 1983; Edgar, Levine & Maddox, 1986). The rate of full time employment of special education exiters has ranged from 32% in Colorado (Mithaug & Horiuchi, 1983) to 37% in Vermont (Hasazi, Gordon & Roe, 1985) to 42% in Virginia (Wehman, Kregel & Seyfarth, 1985).

When youth leave secondary school employment takes on a more central role in the transition to adult life. The employment rate of non-disabled youth increased from 44% to 62% (October, 1985; Bureau of Labor Statistics, 1986) during the year after leaving school. In comparison, the NLTS found that the employment of youth with disabilities only increased from 42% to 50% and this figure includes sheltered workshop programs. Competitive employment for all youth with disabilities was 46%.

Depending upon their disability classification the employment picture varied considerably for youth who had been out of special education between one and two years. Disabled youth who graduated were more likely to be employed than those who aged out or dropped out. Only the employment rates of youth with learning disabilities (58%) and hearing impairments (57%) approached the rate for non-disabled youth. Employment rates for youth with mental retardation (41%), speech impairments (53%), and health impairments (39%) improved during the year out of school but were all below that of nondisabled youth. Employment rates remained approximately the same for emotionally disturbed (42%) and visually impaired (33%) youth after a year out of school. The employment rates remained very low for youth with orthopedic impairments (21%) and fell for youth with multiple handicaps to 16%.

Who Works Full Time or Part Time?

While there appeared to be a trend to reduce part time work and increase full time work for many disability groups during the year after secondary school, only 29% of youth with disabilities were employed full time compared to 49% of regular education non-college high school graduates working full time (Wm. T Grant Foundation, 1988). Youth with learning disabilities and mental retardation who were employed were more often employed in a full time job rather than in part time work. Youth in all other disability categories were more likely to have part time jobs if they were employed. Also disabled youth who were white or male or from families with higher incomes were more likely to work full time.

Who Is Placed In Sheltered Work?

While the average for placement in a sheltered workshop program of 4% for all disabled youth out of school one to two years appeared low, youth with certain disabilities were placed in sheltered programs to a greater extent. Hearing impaired (11% of hearing impaired youth out of school one to two years), multiply handicapped (10%), health impaired (10%), mentally retarded (9%), visually impaired (8%) and orthopedically impaired (7%) were placed in sheltered work programs more frequently.

What Types of Jobs Do Youth Out-of-School Do?

The type of employment appeared to change as youth were out of school more than a year. Work study programs were rarely used for out-of-school youth. In general, there was less emphasis on odd jobs and baby sitting and some increases in unskilled and semi skilled factory work and skilled trades. Parents reported that males with disabilities were most likely to work as semi-skilled or unskilled laborers (39%) or in service occupations (24%). Females were more likely to be employed in service (50%) or clerical (35%) occupations. Youth with learning disabilities increased their employment in skilled trades and youth with emotional disturbances increased their employment in office and clerical jobs.

What are youth paid?

While the average pay rate rose for most groups being out of school between one and two years was not associated with a large increase in wages. On the average youth earned $4.35 per hour which is less than one dollar more per hour than when they were in school. The average pay rate rose to above minimum wage for all but youth with orthopedic impairments and visual impairments.

Postsecondary Education Experiences of Disabled Youth

Postsecondary education and training at two- and four-year colleges and vocational/trade schools following secondary school is a common way for youth to increase skills, employability and eventual earnings. Two years after leaving high school 56% of youth in the general population were involved in postsecondary education or training (Jones et al., High School and Beyond, 1986). Nondisabled youth most often attended 4-year colleges (28%) and 2-year colleges (18%). Ten percent attended vocational or trade schools. For the

NLTS parents reported on the participation rate of youth with disabilities who had been out of school one to two years.

Vocational or trade schools were the most commonly attended post secondary institution with 8% of youth with disabilities reportedly enrolled in the year after secondary school. Youth with disabilities attended vocational or trade schools at rates (7% to 13%) similar to nondisabled youth with the exception of youth with mental retardation (4% of youth with mental retardation out of school one to two years), visual impairments (3%) and multiple handicaps (1%).

Only a few categories of disabilities compared well with the postsecondary education rates of the nondisabled youth at 2- and 4-year colleges. Visually impaired youth attended 4-year colleges (28% of visually impaired youth out of school one to two years) and 2-year colleges (15%) at the same rates of nondisabled youth. Speech impaired (19%) and deaf (19%) students attended 2-year colleges at similar rates to nondisabled youth but attendance at 4-year colleges was considerably less (8% and 15%, respectively) for speech impaired and deaf students. All other categories had very low participation rates at colleges.

Independent Living

The NLTS examined several aspects of independent living of youth with disabilities: residential independence, financial independence and social interaction.

As youth mature, our society expects them to establish households independent of their parents, achieve financial independence and take on adult roles and responsibilities. Although the achievement of such independence takes longer today than in earlier years, the large majority of youth eventually achieve this expectation. Independent living was defined by the NLTS as living alone, with a spouse or roommate, in a college dorm or in military housing. In addition to living with parents other types of living arrangements included living with relatives, in a boarding school, in a group home, in an institution or in a correctional facility.

Do Youth With Disabilities Live Independently?

While in secondary school the great majority of both disabled and non-disabled youth lived with their parents. Ninety-five percent of nondisabled youth lived with their parents (U.S. Bureau of the Census, 1987) and 94% of secondary special education students lived with their parents. Only three disability groups had a substantial percentage of students in other living arrangements. Deaf (10% of all deaf students in secondary school) and visually impaired (4%) students lived in residential schools. Students with multiple handicaps lived in residential schools (4%) and in group homes (4%).

Once out of school it becomes more likely that both non-disabled and disabled youth will leave their parent's home. After being out of secondary school for two years 50% of nondisabled youth remained with parents. Of youth with disabilities out of school between one and two years, 69% still lived with parents. These figures are similar to figures of 68% of special education graduates in Colorado (Mithaug & Horiuchi, 1983) living with parents, but lower than the 82% living with parents in Vermont (Hasazi, Gordon & Roe, 1985).

Of youth with disabilities, 17% were living independently two years out of school. Youth with visual impairments (26% of youth with visual impairments out of school one to two years), learning disabilities (22%) and deafness (20%) were the most likely to live independently. Youth with mental retardation (9%) and multiple handicaps (3%) were the least likely to live independently. For youths with disabilities who were living independently, 21% received money on a regular basis from their parents for their living expenses. While there was a significant trend among all the disability categories for youth to leave the parent's home, not all youth leave to live independently.
The deinstitutionalization movement, involving the encouragement and support for families to raise disabled children in the home and the development of less restrictive community living alternatives has been well documented (Bruininks & Lakin, 1985; Cohen & Warren, 1985; Gollay et al., 1978; Halpern, Close & Nelson, 1985). The NLTS examined the rate of institutionalization and the use of community-based group homes for individuals in various disability classifications. Youth with mental retardation (3% of youth with mental retardation out of school one to two years), hearing impairments (4%) and multiple handicaps (5%) were most likely to live in group homes. Youth with emotional disturbances (6%), mental retardation (8%), orthopedic impairments (8%) and multiple handicaps (35%) were institutionalized during the year after leaving school. Among emotionally disturbed youth, a significant percentage (4%) were placed in correctional facilities by the time they had been out of school one to two years.

Though it appears to take most youth with disabilities a longer time to achieve residential independence, parents of disabled youth reported that they had expectations that eventually the majority of these youth would do so. Parents of all youth not living independently reported that the majority of learning disabled (90%), emotionally disturbed (84%), speech impaired (82%), deaf (82%), hearing impaired (85%) and visually impaired (71%) youth were "definitely" or "probably" expected to eventually live on their own without supervision. Expectations were lower for youth with mental retardation (52%), orthopedic impairments (52%), multiple handicaps (22%) and deaf/blindness (19%).

Financial Independence

One mark of increasing personal independence for youth is becoming responsible for money. The NLTS examined the forms of financial responsibility youth with disabilities had while in school and after leaving school. Parents reported the majority (76%) of the special education students in secondary school had an allowance or other money over which they had control. Youth who were mentally retarded (64% of mentally retarded youth in secondary school), health impaired (59%), multiply handicapped (49%) and deaf/blind (37%) were less likely to have control over their own money. Except for health impaired youth, it appears that youth with more limited ability in the skill of counting money are less likely to be given the responsibility of an allowance (see Functional Skills).

Other forms of financial responsibility such as savings accounts, checking accounts and credit cards become more common for individuals out of school. Of youth with disabilities who were out of school one to two years, less than half (46%) were reported by their parents to have any of these types of accounts. Youth with health impairments (63%) were the most likely to have one of these accounts while youth with mental retardation (40%), deaf/blindness (45%), multiple handicaps (37%) and emotional disturbances (39%) were the least likely. Savings accounts were the most typical type of account youth with disabilities might have. The limited financial responsibility of youth with emotional disturbances does not appear to be related to a lack of skill in counting money as it does with those with mental retardation, deaf/blindness and multiple handicaps (see Functional Skills).

What Kinds of Social Experiences Do Youth with Disabilities Have?

Participation in group activities

Social interaction is important in the lives of adolescents. Through interactions with others, youth learn social skills and roles that help them to make an effective transition to adult life. Two types of social interactions were investigated by the NLTS: affiliating with school or community groups and getting together with friends. The NLTS did not differentiate between friends who were disabled and nondisabled or groups that were associated with a disability or not. Parents reported on the frequency of meetings with friends and the number of groups to which an individual belonged.

Of the students with disabilities parents reported 43% belonged to a school or community group. Students with disabilities participated in groups far less than nondisabled students. Belonging to a school group was most likely for students who were deaf (60%), speech impaired (52%) and visually impaired (54%). Less than half of all other categories of youth with disabilities were members of a school or community group.

Group affiliation appears to be strongest within the school context. Affiliations with groups dropped significantly for disabled youth who were out of school more than one year to well below half for all categories. Emotionally disturbed youth were the least likely to have a community group affiliation (8%).

Social Interaction with Friends

It was more common for youth with disabilities to have interactions with friends than to affiliate with a school or community group both while in secondary school and after leaving school. Parents reported that for youth in school 75% of the students saw friends at least twice per week and up to more than five times per week. However, there were students in some categories that appeared more isolated, seeing friends once per week or less: mentally retarded (25% of mentally retarded youth in secondary school), orthopedically impaired (28%), hearing impaired (28%) and multiply handicapped (44%).

Parents reported on the social activities of out-of-school youth with disabilities. The reliance upon friends increased for most categories of youth with disabilities after leaving school and the amount of time they saw friends increased slightly. However, those groups that were the most isolated while in school continued to be so one to two years after leaving school.

Marriage

Among the general population of youth 20 to 24 years old, 28% were married (U.S. Bureau of the Census, 1988). Of youth with disabilities out of school between one and two years only 10% were married. Among youth with disabilities, females were more likely than males to be married.

Social Responsibility - Arrests

The NLTS examined the extent to which youth with disabilities failed to follow social and legal rules by asking parents whether the youth had ever been arrested. Among the general population youth aged 15 to 25 years the arrest rate was 10% (Federal Bureau of Investigation, 1986). Among students with disabilities in school most had arrest rates well below the average for the general population with only learning disabled (9%) near the national average and emotionally disturbed (20%) significantly above the average.

The arrest rate for youth with emotional disturbances continued to increase to 44% by the time these youth had been out of school one to two years. Youth with learning disabilities (22% of youth with learning disabilities out of school one to two years), mental retardation (14%) and speech impairments (13%) were also above the national average for the general population. For most other categories of disabled youth out of school between one and two years arrest rates increased slightly but still remained below the national average.

SUMMARY

The findings of the NLTS demonstrate than youth with disabilities are not only different from the general population of youth but one disability category is quite different from another in terms of functional skills, school program, employment, social experiences and school completion status. While the majority of most disability categories are mainstreamed for at least some of their school program, there are several groups, particularly students who are deaf, multiply handicapped and deaf/blind, that continue to be educated away from their peers. These students primarily attend separate special schools or are in completely self-contained programs in regular high schools.

Youth in special education not only have the challenges of their disability but as a group also are more likely to be faced with the disadvantages of lower socioeconomic status. In particular, students in special education are more likely than students as a whole to come from families with very low household incomes, with parents who have less than a high school education and with only one parent. These are risk factors that have been identified with dropping out of school, increased problems with the law and poor employment prospects.

The drop out rate for many categories of special education students is higher than the national average, particularly for students with emotional disturbances. Emotionally disturbed youth are also in trouble with the law at an alarming rate. Drop out and arrest rates are also high for youth with learning disabilities, mental retardation and speech impairments.

Post secondary outcomes in terms of continuing education, vocational training, employment, independence and social interaction are also varied according to disability. Students from special education rarely attend post secondary educational institutions and only limited numbers participate in formal postsecondary vocational training. Youth with disabilities have greater difficulty than their nondisabled counterparts in entering the world of work and achieving independence. Except for youth with learning disabilities, less than half of young adults with disabilities are employed in the competitive job market and many are in sheltered workshop programs. Unemployment and underemployment is the expected outcome especially for those who have not graduated. For youth with the most severe disabilities employment is unlikely. Additionally, the majority of the most severely disabled individuals are not involved in any productive adult activity and many are socially isolated without regular contact with friends. While the achievement of residential and financial independence takes longer now for young people in general, for youth with disabilities it takes even longer. They live independently less frequently than their nondisabled peers and have limited financial independence and responsibility. Yet, many parents of youth with disabilities, increasingly so for parents of youth with milder disabilities, remain optimistic that their children will eventually live independently.

Clearly many youth with disabilities suffer major economic and social disadvantages in comparison with the population of youth as a whole. The need to improve the quality of the education and training experiences for youth in the transition period from school to work is imperative. Improving the employment status of youth with disabilities and their successful adjustment to adult life is a national priority (Rusch & Phelps, 1987).

This report has presented an overview of the initial findings of the first data collection of the NLTS. Data is still being analyzed on a number of specific topics pertinent to transition. The study will collect a second round of data in 1990. At that time more in-depth interpretations can be made regarding the progress of secondary and postsecondary education and training toward structuring successful transition outcomes of employment and adjustment to adult life for youth with disabilities.

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THE SUPPORTED EMPLOYMENT CONSORTIUM:

AN ANALYSIS OF AN INTERAGENCY ADVISORY GROUP

by

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Preface

Supported employment programs offer the greatest potential for severely disabled individuals to attain non-sheltered work and achieve status as working, contributing members of society. Supported employment is an employment training model designed to allow severely disabled individuals an opportunity to work in real jobs in the community. Rather than the traditional approach, "place and pray", that expects the individual to be job-ready when placed, supported employment is a "place, then train" model. It involves professional assistance to disabled individuals in job placement, structured on-the-job training and on-going help in maintaining job placement. Essential characteristics of the supported employment model are the analysis of the requirements of the work environment, matching the abilities and potential of the individual to a job, task analysis and behavioral training on discrepant skills and advocacy on behalf of the disabled employee with the employer, co-workers and family.

The model is most frequently applied to a single individual. Alternative approaches include the enclave and mobile crew. An enclave is a small group of disabled individuals trained and supervised among non-disabled workers in an industry or business. The mobile crew is similar to the enclave with the exception that it typically performs service jobs for businesses or individuals in the community.

Supported employment had been in place in California since its development stages in the late 1970's on a limited scale at research demonstration sites and at the discretion of a few progressive service providers. Then a major promotion of the supported employment movement occurred in 1983-84 with the establishment at the national level of the President's "Decade of the Disabled" and "Employment Initiative for the Developmentally Disabled". The initiative was intended to engender the awareness and support of public and private sector agencies, particularly those concerned with the education and employment of persons with developmental disabilities.

In 1985 the State of California applied for and received one of ten federal grants for Supported Employment Demonstration Projects that were made available through a joint agreement between the Department of Health and Human Services' Administration on Developmental Disabilities and the Department of Education's Office of Special Education and Rehabilitative Services (OSERS). The proposal for this California Supported Employment Project was developed by an interagency work group at the state level with lead agency responsibility designated to the Department of Rehabilitation (DR). The Supported Employment Project grant is designed to cover a five-year period (approximately $500,000 per year) and has as its primary mission the successful statewide implementation of supported employment through cooperative, interagency efforts to achieve systems change.

Prior to the grant fewer than 200 individuals were employed under a supported employment model in California, while over 25,000 were in sheltered programs. Currently over 4000 individuals are currently in supported employment programs and working in the community.

A significant feature in the design of the California Supported Employment Project is an interagency advisory committee, the Consortium. The development of this Consortium and its effectiveness as an interagency body in facilitating systems change is the focus of this paper.

The Consortium: An Interagency Advisory Group

Introduction

The Supported Employment Consortium is a state level interagency advisory group that has achieved an unusual level of coordination among its diverse participants. Agencies of the State government executive branch; various state level organizations representing consumers and service providers; and institutes of higher education are represented on the Consortium. An organizational chart of the agencies and organizations and a list of their acronyms may be found in Appendix A. All the parties are concerned with employment, the interests of the disabled, or both. They have come together to facilitate the implementation of a new model of employment services for severely disabled persons.

Interagency coordination was accomplished in the face of considerable obstacles. While there has been an increasing interest in interagency coordination in human services over the years, it has been difficult to achieve. Turfism and parochial interests of bureaucratic agencies have often prevailed. In more recent years legislation has included language mandating interagency coordination, and bureaucratic rhetoric has spoken of its benefits. Still, such policies are often accorded only lip service. Such problems initially impeded the success of the Consortium.

Despite the obstacles, the Consortium has become an effective interagency advisory group. Very practical reasons, or incentives, existed for coordination between the agencies interested in employment or services for disabled persons to occur. Necessary resources to support an interagency grouup were available. The role of the Consortium and its relationship to the participating agencies that eventually developed also account for its success. Ultimately, it was the commitment of a core group of members to work together and create a workable structure that lead to its unusual success.

Emergence of Interagency Coordination

It has taken much of this century for interagency coordination to evolve because opposing values of competition and protection have existed. The earliest forms of cooperation occurred among charity organizations and involved the coordination of specific cases to ensure that only the deserving poor received services (Rogers & Mulford, 1982). For the most part, however, competition was valued and most organizations took an individualistic approach. This view continued until the 1930's.

During the Depression many more human services and agencies were created by the government. There was growing pressure from society for the coordination by the government of the increasing number of public welfare agencies. Attempts were made by the government to exert control through financial and administrative strategies to integrate programs. The ideology of some managers, recognizing the importance of social cooperation, began changing. However, the services of public and private agencies continued to be fragmented and duplicated due to the desire of many organizations to protect their own "turf" (Rogers & Mulford, 1982).

Bureaucracy was accepted as a viable organizational form for human services in the 1940's. The emphasis was on clear lines of authority, division of labor, establishment of rules and coordination of activities within the organization. In the 1950's the orientation of human service agencies expanded to include plannning. Representatives from outside the organization began to be included on planning councils (Stafford, 1985).

In 1960 the federal government published a report describing various methods of interagency coordination and federal legislation followed which encouraged collaboration. The Higher Education Act of 1965 (P.L. 89-329) encouraged cooperation between higher education and other agencies. The Elementary and Secondary Education Act (P.L. 89-10) required schools to collaborate with other institutions. The Federal Intergovernmental Cooperation Act of 1968 gave states a more active role in coordination and impetus to human service organizations to increase coordination efforts. There was also a tremendous growth of social programs in the 1960's. However, even though there was a great deal of emphasis placed on governmental coordination of social programs and strong support from the Secretary of Health, Education and Welfare, Elliot Richardson, there was not widespread success in coordination during this period (Rogers & Mulford, 1982).

Since the late 1970's human service agencies have been more active in interagency collaboration at both the federal and state levels. Interagency collaboration has been generated at the local level by agencies frustrated with existing service delivery systems. State departments have reorganized agencies and departments in a effort to reduce duplication and inefficiency and increase the quality of services. The increased efforts towards collaboration are, no doubt, also related to the tightening of resources available to human services and increasing requirements for accountability.

The Education for All Handicapped Children Act (P.L. 94-142) was the first significant federal public policy concerned with the education of handicapped individuals which established a mandatory base for interagency collaboration. Under the mandates, a student may receive educational and related services from other agencies although the provision of those services identified in the Individual Program Plan must be guaranteed by the State Education Agency. This implies some degree of service coordination.

The Office of Special Education and Rehabilitative Services (OSERS) has issued joint policy statements with other federal agencies of their intent to collaborate on the provision of services (Nelkin, 1986; Will, 1984). A number of grants have been offered to assist states and local areas to develop collaborative service approaches (Education Commission, 1987; Stafford, 1985; Will, 1987). Reports of collaborative efforts have indicated more success since the late 1970's.

According to Will (1987), Assistant Secretary of OSERS, the placement within OSERS of the Rehabilitation Services Administration, Office of Special Education Programs and the National Institute on Disability and Rehabilitation Research has created opportunities for coordinated and integrated programs for handicapped individuals. There is a fair amount of intraagency planning between the three offices and cross utilization of staff for the preparation of policy papers, concept initiatives and task forces. The Education of the Handicapped Act (P.L. 98-199) has provided the flexibility to combine and mesh authorities to create change, for example, the Employment Initiative for the Developmentally Disabled and the Supported Employment Demonstration Projects. The impact of this initiative, according to Will (1987), is that it will require coordination among agencies at the state and local levels to successfully change the education and employment systems that serve severely disabled individuals. This is the context within which the California Supported Employment Project Consortium was created.

Incentives for Interorganizational Exchange

Practical reasons must exist for agencies to cooperate. Each agency must benefit from the relationship in order to justify the expenditure of resources to develop and maintain such relations. From an analysis of community health organizations, Levine and White (1961) developed a conceptual framework of exchange as the basis for understanding relationships between organizations. In order for an agency to achieve its objectives it must control certain elements: clients and resources (equipment, knowledge, funds); and personnel to direct the resources. Few organizations have access to enough elements to fully achieve their objectives. Under conditions of scarcity of elements, organizations must select certain elements (ie. specialize) to best achieve success. An organization can seldom carry out its specialized functions, acquiring all necessary elements without entering into relationships with other organizations. Levine and White (1961) identified several factors which determine the degree of exchange between organizations. The level of interaction will increase if organizations have similar goals and similar clients and clearly specified, non-competitive, complementary functions. The function of an organization will also affect the degree and direction of exchange; direct service organizations are the most likely to enter into exchanges.

A description of the clients and functions of several of the key direct service agencies participating in the

Consortium provides an example of how they fit the conceptual framework of exchange. The key agencies involved in the Consortium are direct service providers and they have similar goals and clients but complementary functions. The Department of Rehabilitation (DR) provides employment training and placement services to disabled clients whom they determine to be employable. The Department of Developmental Services serves only individuals with developmental disabilities (mental retardation, epilepsy, autism, cerebral palsy, or conditions closely related to mental retardation). They provide residential and support services (eg., transportation to work) to all clients, including those receiving services from DR. They also provide day activity services to the most severely disabled not served by DR. The State Department of Education (SDE) provides educational and pre-employment (but not employment) services to all disabled individuals to prepare them for the services they eventually receive from DR and DDS. These agencies have similar clients and complementary functions. Figure 1 diagrams the relationship of the clients and functions of the agencies. Incentives exist to coordinate their efforts to provide services to all clients.

Insert Figure 1 about here

Related to the notion of scarcity and need for exchange is the concept of efficient resource utilization. Organizations interested in improving resource utilization, as well as those facing critical funding shortages, may reduce duplicated or inefficient services through interorganizational coordination or exchanges (Cook, 1979; Eyster, 1975; Kaplan, 1975; Schwartz, 1981). Efficient resource utilization is a particularly important incentive for exchange under the current conservative funding for human services.

Increasing change in an organization's field leads to increased uncertainty and provides the incentive for increased reliance on other sources of information, ie., cooperating agencies, in order to deal with change (Benveniste, 1977; Terreberry, 1968). A study of community education (Golder, Jacobs, Murray & O'Dea, 1975) identified a major incentive for interagency coordination as the increasingly complex nature of community problems. The complexity and interrelatedness of social problems require coordinated and comprehensive treatment from a number of agencies. No single agency has all the necessary expertise (Black & Kase, 1965; Hord, 1985; Schindler-Rainman & Lippitt, 1977).

No single agency, ie., state department, research institution or service provider, had all the expertise in funding, training technology or implementation skills to change the employment training system in California to accomodate the supported employment model on a state wide basis. A coordinated effort involving all such components was essential for success. DR, as the generic employment and training agency for the disabled, has the authority to certify and fund employment programs for the disabled, but it lacked expertise in the new training technologies associated with supported employment. The expertise existed at the research and development level and with some progressive local service providers. However, institutes of higher education and local providers lacked the authority and know-how to institutionalize supported employment and implement it statewide. Mutually satisfying incentives and resources existed for collaboration and exchange.

Environmental Pressures for Change. Environmental changes and pressures beyond the organization's control are also believed to be determining factors in interagency coordination. The demand for human services has been accelerating (Black & Kase, 1965; Schindler-Rainman & Lippitt, 1977). Client and consumer groups have become increasingly sophisticated about expressing their needs. They are more aware of the types of resources and services available to some and the discrepancy between those who receive services and those who do not. They have applied pressure to organizations to initiate cooperative relationships (Aiken, 1975).

Consumer advocacy groups have been particularly successful in their efforts to affect change in the philosophy and provision of services to developmentally disabled individuals, including supported employment. Parents of developmentally disabled individuals make up the core of consumer advocacy groups and infuse it with a high level of energy and commitment. Professional educators and academic researchers add credibility to what has become a civil rights movement. Theirs is a special interest group difficult to oppose. Their presence is experienced in person and in spirit on the Consortium.

In California advocacy groups have been instrumental in the passage of several significant pieces of legislation that have affected supported employment. They were instrumental in passing the Lanterman Developmental Disabilities Services Act (1974) which provides individuals with developmental disablilities an entitlement to services based solely upon their individual needs. At the federal level they successfully supported the Rehabilitation Act of 1973, P.L. 93-112 and the Education for All Handicapped Children Act, P.L. 94-142 (1975), two of the most far reaching pieces of civil rights legislation, for the disabled person's right to an education and to work. More recently they supported the passage of the Ammendments of the Education of the Handicapped Act, P.L. 98-199, (1984) which has identified the transition of disabled students from school to work as a national educational priority. This legislation authorizes the funding for the Supported Employment Demonstration Projects for Systems Change for states (one of which is the California Supported Employment Project and its Consortium) to develop more coordinated service delivery systems in instituting the supported employment model. At the state and local levels advocacy groups continue pushing for services that integrate developmentally disabled individuals into the community and utilize multiple resources.

Typologies of Interagency Relations

A typology of levels of coordination can be helpful in analyzing interorganizational relations. A three tiered typology has been suggested by several theorists (Lehman, 1980; Schwartz, 1981; & Stafford, 1985). The first tier or level is described as laterally linked organizations. Each organization is focused inward and retains control of its own resources. Goals are clearly those of each individual agency. Interactions include informing and consulting. Joint decision making is only intermittent. With the second level, the centers of control remain with the individual agencies and goals continue to be individualized within each agency. A coordinating unit does exist to facilitate the transfer of information and formulation of agreements. Co-decision making is increased. With the third level, a superordinate unit exists to guide and coordinate joint policy and decision making. Although some theorists heave assigned the terms cooperation, coordination and collaboration to the three tiers respectively (Stafford, 1985), this distinction is not universal and the terms are regularly used interchangeably in the literature.

Many of the interagency projects described in the literature most closely approximate the second tier (Lehman, 1980) or interagency committee model (Pritchard, 1977): a group made up of representatives from human service agencies and other interest groups. The purpose of the group is to improve interagency communications, to identify needs, locate gaps in service provision and advocate for changes. The interagency committee usually has no authority but depends on the involved agencies commitment and abilities.

The Consortium fits this model. Each participating agency or organization has retained control of its goals and operations. The Consortium serves as the coordinating unit to facilitate interagency communications, identify needs, develop policy recommendations and advocate for change. The Consortium has no legal authority, however, the commitment and expertise of the participants has rendered it an effective advisory group.

Factors Facilitating Coordination. Factors that facilitate or inhibit coordination and collaboration have been identified by a number of researchers (Hord, 1985; Magrab, 1985; McLaughlin, 1985; Schindler-Rainman & Lippitt, 1977; Schwartz, 1981; Stafford, 1985; West-Stern, 1985; Whetten, 1981). Factors which facilitate interagency relations include: consensus on the nature and scope of the problem and a mutual purpose, the commitment of key organizations, agency representatives of equal status, consensus on the objectives, clearly defined responsibilities, on-going evaluation and mechanisms for resolving disputes.

Many of the factors that facilitate coordination exist within the Consortium. There is a general acceptance regarding the nature and scope of the problem: that until supported employment became a viable option, opportunities for meaningful work had not been available to far too many disabled individuals (70% unemployment is the accepted figure). The purpose of the grant and of the Consortium was to facilitate the implementation of supported employment statewide including the institutional changes necessary to achieve it. The commitment of each of the many agencies varies but the great majority of the representatives continue to actively participate in the fourth year of the project. Agency representatives are of relatively equal status. Those from state agencies are operations level managers close to the decision making centers of their respective agencies. Representatives from advocacy groups and provider organizations are executive level personnel. Representatives from colleges and universities are respected experts in special education and rehabilitation. While there was not consensus on objectives or clearly defined responsibilities initially, following a self-evaluation process and restructuring, objectives and responsibilities were clearly defined and are regularly up-dated. Decision making by consensus has provided the mechanism for resolving disputes; differences are aired and resolved openly.

Factors that have been identified which inhibit the collaborative process are competition for funds, turf protection, fear of loss of organizational identity, domination by more powerful agencies, differing interpretations of laws, regulations and policies, unclear roles and purposes, differences in philosophical and theoretical perspectives, lack of resources and a history of previously failed attempts at interagency collaboration. While competition for the grant and control of the supported employment service system existed initially, this is no longer the case. The Consortium also survived a period when roles and purposes were not clearly defined. Some differences continue to exist and affect the Consortium in minor ways. All of the agencies have well established identities and domination is not an issue. None of the inhibiting factors has emerged to such a degree as to be detrimental to the current effectiveness of the Consortium.

Resources for Interagency Coordination. An essential element in the success of an interagency advisory group is adequate resources to function. Specific funding may be necessary to provide for personnel and supplies or they may be included as part of the existing resources of an office involved in the advisory efforts. Experts provide specific informational resources. Other individuals familiar with an organization, legislation or political organizing provide important skills (Redman, 1973). The Consortium has benefited from a substantial range of resources. The Supported Employment Project grant funds have covered support staff and materials as well as the expenses of the participants to attend meetings. Participating agencies have included Consortium responsibilities as part of the regular job duties of their representatives.

The State Council on Developmental Disabilities (SCDD) has also contributed its resources, providing mailings, annual reports, as well as substantial personnel time to the Consortium. The SCDD is a state and federally mandated interagency body representing the parents, consumers, advocates and State Departments related to the field of developmental disabilites. Because its role is to review the developmental disabilities service system and philsophically plan for services, it is very involved with interagency activities. The SCDD views its staff support and participation on the Consortium as facilitating achievement of two of its own goals. It is the most advantageous way for it to fulfill its goal of facilitating the federal mandate to improve employment services, in general, and supported employment, in particular, for developmentally disabled individuals. It also fulfills a council goal of facilitating interagency relations.

The skill, expertise and commitment of the participants are an even more important resource. Participants from universities bring state-of-the-art technology from research and development projects. State agency participants have the position and experience in government to work within it effectively. A sense of ownership of the process has maintained full participation and a high level of group and individual morale over a number of years.

Evolution of the Structure of the Consortium

The internal structure of an interagency group must fit the needs of the individuals and agencies involved in using it in order to remain viable. The alteration of the structure of the group is necessary if it is to effectively respond to differing organizational and political conditions. There have been three distinct stages in the evolution of the Consortium, reflected in three different internal structures. The different structures have been the result of varying demands for advice and have directly affected its ability to function and to influence the agencies it represents.

The Working Group. The origins of the Supported Employment Consortium are found in 1984 when a group of advocates for developmentally disabled individuals became aware of the federal Employment Initiative for the Developmentally Disabled (Will, 1984) and the available grant monies associated with it. A small informal working group of individuals formed, made up of special education professors, parents, professional advocates and representatives from various key State Departments: Developmental Services (DDS), Rehabilitation (DR), Education

(SDE). A number of the original working group were also members of a Honig Special Education Advisory Committee and the State Council on Developmental Disabilities (SCDD) and had a history of working together. The group represented some of the most progressive, innovative and committed individuals in the field. Their involvement with supported employment was the logical extension of the movements within special education and the field of developmental disabilities for deinstitutionalization, normalization, least restrictive environment and community integration.

During many of the preliminary meetings there was much discussion over the type of authority the Supported Employment Project would have. Many wanted the Supported Employment Project to be cosponsored and coordinated by the Departments of Rehabilitation, Developmental Services and Education. Others preferred a traditional hierarchical, lead agency approach. When it was learned that the Request for Proposals (RFP) required a lead agency, competition over who was best suited to be the lead agency created tension within the work group. Original members recall many meetings marked by heated discussions and walk-outs! The two agencies most involved in this conflict were DDS and DR. This conflict had earlier roots and continues to be an issue according to some. The conflict represents the kind of turfism that has the potential to inhibit effective cooperation between agencies.

DDS had for many years been responsible for funding Work Activity Programs (WAPs). WAPs are center-based, sheltered workshop programs for developmentally disabled people that provide supervision and training in work activities and pay clients based on their level of their of productivity, a percentage of the minimum wage. In 1980 jurisdiction of the WAPs was moved to DR as part of a reorganization of the State Health and Welfare Agency. During the preliminary discussions to determine the Supported Employment Project lead agency, DDS not only wanted to be the lead agency but also wanted the WAPs back. Such an arrangement would mean that all adult services for developmentally disabled individuals would be under DDS. DR wanted to retain the WAPs and, with some reservation, to be the lead agency. This would create a more generic configuration with all employment programs for disabled individuals under one Department. However, DR had a poor "track record" in providing job placement and support services to developmentally disabled clients and some within DR questioned the feasibility of the supported employment model.

Eventually the work group recommended that DR be the lead agency but was unable to resolve the dispute. The dispute, which had escalated to top levels in each Department, was not resolved until the Secretary of Health and Welfare became involved and decided that DR would be the lead agency.

A DR staff person, Keith Foster, was placed in charge of the preparation of the grant proposal. While Foster has had a record of creating innovative and collaborative approaches to funding and new programs, the grant proposal represented the thinking of the entire work group. The proposal included ambitious policy and resource changes for the key state agencies and higher education.

In the proposal the role of the work group was formalized. The Consortium was to be the primary vehicle for the coordination of Supported Employment contracts, services and training with the State of California. It would be chaired by the lead agency's SEP Director. The Consortium would be made up of staff from the key state agencies and other state level organizations, higher education and community groups. Figure 2 illustrates the relationship of the Consortium to participating organizations as it was conceptualized at that time. Each participating organization was to use the Consortium as a clearing house to keep all participants aware of activity which would have impact upon supported employment. Consortium members were to provide assistance to other members whenever possible. The Consortium was to assess needs and identify problems and make recommendations for action.

Insert Figure 2 about here

While DR officially sanctioned the proposal, other key state agencies were not required to do so and did not "sign off" on the proposal. This represents a potential for very minimal support by other agencies since no specific commitments on what each agency would do regarding the changes proposed in the grant were required of them by DR. As is the practice with proposals for federal grants, a number of the agencies did submit letters of general support along with the proposal.

The work group had accomplished the task of developing the proposal for supported employment systems change in California in spite of difficulties and unresolved issues. The small size of the group, their familiarity and the specific nature of their task aided them in successfully completing the grant proposal.

Beyond the thinking for the proposal, the group and the agencies it represented had not demonstrated a high level of interagency collaboration. The issue of agency authority had led to considerable conflict and the final decision for lead agency was imposed from a higher level of government. Other state agencies and organizations, while expressing support, were not obligated to comply with the objectives in the proposal which involved them. Individuals in the work group expressed commitment to collaboration and their agencies appeared to support their participation. However, commitment to interagency coordination had yet to be demonstrated.

Year 1 - Floundering. Lack of sophistication in how to work collaboratively carried over into the first year of operation. While DR had previous experience with advisory groups created to advise on specific department policy or procedural issues, they did not have experience with advisory groups with multiple agency representation designed for the purpose of coordinating all their efforts related to a project of mutual interest. During 1986, the first year of the grant, Consortium members met regularly as a committee-of-the-whole to exchange information and discuss policy issues. However, little substantive work was accomplished. Their efforts had not affected other agencies. DR was also not utilizing their input.

DR had proceeded with internal policy and funding changes and enabling legislation to implement supported employment programs. Policy decision making power was at the deputy director level (see Appendix B). Since DR held the responsibility for the grant these individuals were administratively possessive of the decision making and did not include the Consortium in policy decisions. Although the SEP Director's position was at the deputy director level, it was a new position and the SEP Director lacked the clout to influence the other deputy directors who approached the supported employment program conservatively. As in most bureaucracies, the time frame for decision making is very short, characterized as "firefighting" (Meltsner, 1976). DR had budget and legislative deadlines to meet. The

Consortium could not have responded within DR's time frame in any case.

Consortium members were frustrated and felt they were only "along for the ride", reacting to DR initiative. It was clear to Consortium members that something needed to change in order for the Consortium to become an effectively functioning unit. Outside technical assistance funded by OSERS was available to the all the Supported Employment Projects during their first year of operation. The members identified the inadequacy of the Consortium to affect change as a major problem warranting outside technical assistance and agreed to participate in an evaluation and problem solving session which the SEP Director arranged for through the OSERS technical assistance project.

An all-day Consortium meeting, lead by an outside facilitator, was devouted to the evaluation of their efforts, identification of problems and development of a plan to correct its inadequacies. A major point of contention was whether the Consortium was advising DR only or developing directions for all agencies. A number of contradictions existed within the structure of the Consortium. The role of the Consortium as it was described in the proposal implied more collaborative effort than DR or the Consortium were able to realize. The position of the SEP Director as Chair of the Consortium seemed to indicate that the Consortium served DR and that DR had some superordinate role over the other agencies and organizations. Such a configuration does not facilitate co-decision making or coordination. It addition, it seemed that the number of individuals involved was inadequate to produce tangible products or reach a significant number of people to impact other organizations at the state or the local level.

The Consortium - The New Structure. The outcome of the evaluation and planning process was the modification of the internal structure of the Consortium: the establishment of a subcommittee system, an expansion in participation, and a change in the leadership. The relationship between the Consortium, DR and other state agencies was more clearly articulated and channels of communication identified. Individuals and agencies recommitted. These changes have significantly improved the ability of the Consortium to function as an interagency advisory group.

The controversy over the role of the Consortium as an adviser to all involved agencies or DR only was resolved. It was decided that the Consortium was to develop policy recommendations and comment on the activities of all agencies and that changes needed to occur in the operational design of the Consortium in order to achieve that objective. A subcommittee system was instituted with committees addressing special areas of interest: employer, adult services, school services, training, evaluation, expansion (to identify needs and resources for populations not currently served), and omnibus committee. The Omnibus

Committee refined the new design, developing written guidelines on the role and activities of the Consortium (see Appendix C) and worked closely with the SEP Director through 1987 to ensure that the new system became operational. When its goal were achieved, it was disbanded.

The subcommittees are chaired by a Consortium member. The subcommittee membership is made up of additional state agency representatives, experts in the employment and developmental disabilities fields and persons with local, hands-on program experience. Based on broad annual goals developed by the Consortium, the subcommittees further identify and prioritize specific objectives. They meet as often as necessary between quarterly full Consortium meetings. Recommendations are brought to the Consortium for consideration and endorsement. Figure 3 illustrates the relationship of the committees to the Consortium and the Consortium to its participants. The Consortium serves as a conduit for subcommittee products and recommendations to be disseminated to the appropriate state agencies for further action. In addition to recommendations being transmitted in writing, there is a strong expectation that representatives will take the recommendations back to their agencies and that agencies will respond.

Insert Figure 3 about here

In order for the committees to function, staff support was needed. Agendas, minutes and background materials needed to be prepared, and distributed to members prior to meetings. Arrangements needed to be made for meeting places. Technical assistance needed to be provided to members during meetings. These activities represented a significant contribution of personnel, time and material support. Staff support to all the committees is now provided by the University of San Francisco (USF) Supported Employment Training Project, a contractor to the Supported Employment Project and by the SCDD.

The USF Training Project has served an additional role in public relations. Because their contract is time limited for the grant period, they have focused on developing a network of local committees and training groups that can carry on trainings and maintain communication among providers and other local groups after the grant expires. This network builds the support base for and the visibility of supported employment at the local level throughout the State.

The new design has increased the productivity of the Consortium. Since restructuring, each of the committees has developed specific products and recommendations. The Adult Services Committee has developed recommendations for integrated work and community integration for day programming for the most severely handicapped which have been incorporated into newly proposed regulations by DDS.

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The Employers Committee has overseen the development of an employer marketing campaign which includes a brochure and video. The Training Committee has provided guidance to the USF Training Project in addressing training needs at all levels (pre-service, in-service and State level). The School Services Committee has developed quality indicator standards for school-based programs. The Evaluation Committee has developed recommendations for a coordinated data base across all human service agencies. This is by no means an exhaustive list of the accomplishments of the committees.

Involved agencies have found creative ways to utilize funds on behalf of supported employment. Barriers to supported employment have been identified by the Consortium and its subcommittees and state agencies have responded. The need to inform employers of the potential of supported employment and the availability of a new source of labor was identified. In response, the Employment Development Department (EDD) featured an article about supported employment in a publication which reachers 750,000 employers. That case managers (DDS) for developmentally disabled clients lack awareness of supported employment was identified as a barrier to referral of clients. In response DDS and the SCDD jointly funded a project to provide in-service training in supported employment to case managers statewide. The need to improve skills in interagency collaboration was identified for Consortium members. In response, a workshop, open to Consortium members, supported employment staff and others interested in interagency cooperation from around the state, was sponsored.

Another important aspect of the modification of the Consortium was for DR to become an equal status member. Two steps were taken to achieve this goal: increased DR participation and a change in the leadership of the Consortium. Additional DR personnel serve on subcommittees related to their area of expertise. This arrangement brings DR in parity with the level of participation of the other key state agencies. The SEP Director is no longer the only access to or source of information from DR. The SEP Director is also no longer the chair of the Consortium. The Chair position was given to an individual who was a neutral party in relation to the key state agencies involved in services for developmentally disabled individuals. Bob Little, the parent of a developmentally disabled adult and a long time advocate, became the Chairperson. He had been involved with the work group from the beginning and has had a record of commitment to supported employment. As a management level administrator with EDD, he was also familiar with the operations of the state agencies. He continues in that position to date. While he is an advocate of supported employment, he does not represent or push any particular agency perspective. His leadership has encouraged open dialogue. The neutrality of the Chair has

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supported the revised structure and purpose of the Consortium.

Decisions are made by consensus. Meetings are open and all who attend may voice their concerns. This type of decision making has been advantageous. Who can vote is not an issue. Tensions based on how an agency has voted (abstentions, blocking votes) are avoided. Issues are discussed until there are no longer any objections. While this approach takes time, it creates a more solid foundation of support.

Response to the New Consortium

The internal changes within the Consortium have improved its ability to work effectively. The Consortium and subcommittees provide a vehicle for communication that did not exist two years ago between the state agencies or between state agencies and others in the field. The meetings have provided a safe environment for discussion. They have provided a forum in which to hear and express varying view points and gain understanding from the differing perspectives. There has been "head-knocking" but it has not become detrimental. The general feeling of the participants is very positive.

Since restructuring, there has been greater interaction between the policy makers and implementers of supported employment. Interaction between the policy advisers and implementers increases the probability that advice will be successfully implemented (Benveniste, 1977). The new structure has provided access to the Consortium for the disability services provider. Service providers have identified implementation issues and problems for the Consortium and solutions have been figured out to many of these problems. The change has also increased the numbers of people directly involved with policy, building a constituency of support within other agencies and the employment services community for supported employment and interagency cooperation.

The contributions of individual members have been a significant factor in the success of the Consortium. The level of commitment of most members is very high and has been maintained through difficult times. The Consortium has been fortunate to have had innovative people from each key agency involved. All of the subcommittee chairpersons have been very productive. The efforts of the Adult Services Committee Chairperson, Julie Jackson, will serve as an illustrative example. Jackson has both a personal and professional interest in the developmental disabilities field. She was a professional advocate before coming to DDS and is the responsible person for a relative with developmental disabilities. Among her responsibilities at DDS she is in charge of Day Programs. So as not to create competing groups she has used the Adult Services Committee as an advisory body rather than start a new group. This committee has significantly impacted the program she

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administers; it has been instrumental in developing recommendations for DDS Day Programs.

Involvement on the Consortium has influenced the SEP Director, Margaret Lamb, to take more of an advocacy role in educating all state agencies (not just those serving disabled persons) about supported employment issues. Presentations to the staffs of various state agencies have addressed the basic concepts of the supported employment approach as well as the need for the new approach to employment training for persons with disabilities. Other agencies have also been able to educate her and the SEP staff on how each of them operates. This exchange of information has resulted in agencies being able to identify how their resources can be utilized in creative ways on behalf of supported employment and has lead to greater cooperation between them and the SEP.

The level of communication outside of meetings between Consortium members and individuals from different state agencies and other groups has increased with the increased levels of participation on the Consortium. Individuals know who to call. Cooperative agreements have been developed between agencies on the Consortium: eg., the DR-DMH supported employment pilot projects and the DR-SDE Transition Partnership Project. The quality of communication has improved and added to the spirit of working together that the Consortium has engendered.

While the Consortium has developed a sizeable array of products and substantial policy recommendations, its political role of building a coalition of support and developing an issue network has become equally important. The Consortium has created an issue network of individuals with expertise beyond the more narrow scope of traditional DR vocational training for disabled persons. The issue network now includes employers, generic service agencies and other disability groups not typically served by DR. The expertise of individuals and organizations has increased the scope of know-how available for supported employment efforts. The Consortium has provided a forum for the various segments of the system to come together and communicate.

Without the Consortium, the effects of DR's own internal changes to implement supported employment would not have been nearly as far reaching as they have become. Employers would not have become an actively involved special interest group and would not have developed a professional marketing strategy. It is unlikely that DR would have approached EDD to feature an article about supported employment. Other disability groups would not have become involved. Without the demonstrated success of the model and the on-going communication with the Department of Mental Health (DMH), it is unlikely that DR and DMH would have jointly funded a number of supported employment pilot projects.

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There is now a much greater awareness of supported employment at all levels statewide. The Consortium has developed a coalition of support. The first statewide Supported Employment Conference hosted by the Consortium drew hundreds of parents, consumers, case managers, service providers, DR counselors and state level administators to the two-day program. Hundreds more were unable to attend because of lack of space. The level of enthusiasm is high. The success of supported employment has become infectious; even those within DR who were originally sceptical have revised their opinions.

Dynamics do exist that limit the success of the Consortium. Aside from DR's own initial "wait and see" attitude, the involvement of other agencies and participants has ebbed and flowed over time. In some cases agencies and individuals with strong commitments and generally high productivity have temporarily pulled back when their internal department business has taken priority.

The SDE involvement has been diluted by controversy over its definition of Transition, the period of time overlapping the last years of public school and the initial years of adulthood. The SDE includes all students "at risk" in its definition, while DR, DDS and others have a more narrow definition which includes only the more severely disabled (eg., developmentally disabled, traumatic brain injured, chronically mentally ill) as far as supported employment is concerned. It was not until the third year, when the SEP began expanding its target groups to include the chronically mentally ill that the Department of Mental Health (DMH) began taking a more active role. The inluential Conference of Local Mental Health Directors has now formed a vocational committee that will address supported employment. This is a major step for a system primarily based in the medical model.

Other individuals who do not have a direct or personal interest in supported employment but who have been invited to participate or appointed by their agency are less involved. Objectives in the original grant that required commitment from these agencies have not been met. For example, the California Community College Chancellor's Office, probably the least involved state level organization to date, has not actively developed the programs identified in the grant within the community college system. The State Job Training Coordination Council (SJTCC) has also not made supported employment a priority so the powerful Private Industry Councils (PIC) have not become involved. While some agency participants have not been actively pursuing supported employment objectives, they have not allowed hidden agendas to sabotage progress.

It is likely that efforts will be made by the Consortium to address these and other barriers to coordinated interagency efforts. Eligibility and funding issues for new target populations, chronically mentally ill and traumatically brain injured persons, are beginning to be addressed. The need for support services to individuals outside of the work context is another area demanding a coordinated interagency approach. Community integrated work for the most severely developmentally disabled individuals unable to meet DR's Supported Employment eligibility criteria will continue to be an issue. The scope of issues addressed by the Consortium has gone beyond Supported Employment to include generic employment training and the need for support services outside the context of work.

It appears that the key State Agencies will continue to work together beyond the grant period. The mechanism at the state level for continued interagency coordination beyond the grant period is yet undecided. However, there have been discussions regarding legislation which would create an interagency oversight group for supported employment. At this point in time, it is likely that DR would also be in agreement with such an idea. This indicates a significant shift in attitude from the initial stages of the Consortium.

Conclusions

The nature of supported employment requires multiple agency involvement and interagency cooperation to work. Supported Employment utilizes multiple funding streams, and crosses many domains (training, placement, work, support services), many client populations (developmentally disabled, chronically mentally ill, traumatically brain injured) and many organizations (employers, service providers, education). Will's (1987) statement that the impact of supported employment will be that it will require interagency coordination is being demonstrated.

The Supported Employment experience in California can be compared to the various conceptualizations theorists have put forward. In relation to the interorganizational exchange theory (Levine & White, 1961), the systems for providing services to severely disabled individuals in California meets its criteria. The key State Departments involved have specialized: DDS focuses on residential and community support services, SDE focuses on education and DR on employment. They have similar clients, similar goals and complementary functions. The fact that they are direct service agencies also increases the likelihood of interorganizational exchanges.

A number of the factors which facilitate or inhibit interorganizational relations can be identified as having affected the functioning of the Consortium. The commitment to work together and to address the factors that inhibited cooperation has been a significant in the Consortium's success. Among the original work group and the core of the Consortium there was consensus on the problem that severely disabled individuals lacked access to meaningful work opportunities and that the supported employment model was a viable model. Though commitments from key state agencies were not formal, they have continued to participate and have recommitted to work to create changes in the system. While consensus on the objectives and responsibilities did not exist initially, through self-evaluation and restructuring these problems have been fairly well resolved.

There have also been strong environmental pressures for interorganizational relationships. According to a number of theorists (Black & Kase, 1965; Hord, 1985; Schindler-Rainman & Lippitt, 1977) the pressures on the human service system for coordinated services to address complex, interrelated social problems is a significant factor in the development of interorganizational relationships. Service systems for the severely disabled have historically been fragmented. Supported employment requires education to work with adult service systems and for the adult service system to cooperate to provide both employment and support services in order for successful outcomes to be achieved. Legislation, federal encouragement (Will, 1984 & 1987) as well as the nature of the services have all supported interorganizational relationships in supported employment.

Pressure from consumer or advocacy groups described by Aiken, 1975; Black & Kase, 1965; Hord, 1985; Schindler-Rainman & Lippett, 1977 has been significant in the supported employment experience. Advocacy groups have supported program development at the local level as well as policy development at the federal and state level. Most Consortium members would be considered advocates themselves.

The Consortium was created voluntarily. The RFP guidelines for the grant did not require an interagency body. Unlike interagency groups established out of legislation, the Consortium had no guidelines or procedural regulations to follow. It developed informally over a period of time. It struggled with its identity and went through several stages of development: the creation of a committed core group, an initial period of "unloading" of resentments and "turf" issues, a self-evaluation and restructuring and the creation of specific tasks and actual work in which people would become involved. Based on current social trend, interagency cooperation clauses are often written into social legislation but they are often acted upon only perfunctorily. With the Supported Employment Consortium, however, the players have had ownership and commitment to the cause.

The development of the subcommittee structure and change in the chairmanship were important determining factors in the success and longevity of the Consortium's interagency effort. The self-evaluation process allowed the Consortium to identify problems based on its first year of experience and restructure itself to remedy the problems. The existence of a lead agency was the most problemantic concern in getting collaboration to occur between agencies. Although the lead agency position cannot be eliminated, the move to have DR represented by non-Supported Employment staff on committees and the Consortium Chairmanship to be held by a neutral party has been helpful. The expanded participation brings the implementers and policy makers in direct contact. There has also been substantial staff and resource available to support the subcommittee structure through the grant contract with USF and from the SCDD.

While it is clear that the agencies need to work together, it is the individuals themselves and the mode in which they communicate that determines the quality of the process. The motivation of Consortium and subcommittee participants is strongly influenced by their commitment to the consumer group they represent as well as what Schindler-Rainman (1981) identified as their quality-of-life orientation. The consumer group focused on so far has been the developmentally disabled. There is a lot of emotionality associated with the issues in this field from advocacy groups which are family and parent-based in addition to being well organized. Many Consortium members are members of advocacy groups or have been strongly influenced by them. Many Consortium members are also of a newer generation of bureaucrats who are attempting to put aside old parochial concerns for a new more cooperative approach. The dialogue fostered by the Consortium has even affected participants who were initially conservative and sceptical. Actual client successes on the job have also reinforced the notion that the supported employment model is a critical innovation to employment services for severely disabled individuals. People have gotten caught up in the movement.

While it appears that Supported Employment would have happened anyway, being both a grass roots as well as federally supported initiative, it would not have become as philosophically far reaching as it has without the efforts of the Consortium. Its major effect at the local as well as State level is the increased awareness of the need for supported employment and the attitudinal change necessary to create changes in the service system. The Consortium's educational and public relations approach has built the base and set the stage for more formal interagency agreements.

The unusual success of the Consortium as an interagency group is based on a number of factors. The nature of supported employment requires the coordination of multiple service delivery systems with the concerns and needs of parents and employers. Federal legislation and policy initiatives have encouraged increased levels of coordination at the agency level. Advocacy groups continue to push for more integrated approaches in service delivery. All these factors provide strong incentives to attempt to coordinate agency relations. The contributions, commitment and perseverance of the individuals involved are an important and necessary resource for interagency coordinatioon. The structure that the Consortium eventually created has been the most significant factor in its success.

In comparison to other states that also received Supported Employment systems change grants, the California experience is unique. No other state has created an interagency comittee with so much representation of agencies beyond DR and a Developmental Disabilities Department. The

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Consortium has evolved into an "issue network" of individuals who know the legislation, regulations and technical data in their area of expertise and who are willing to share that expertise to create a foundation of support and a framework for effective interaction on behalf of systematic changes needed to implement supported employment in California.

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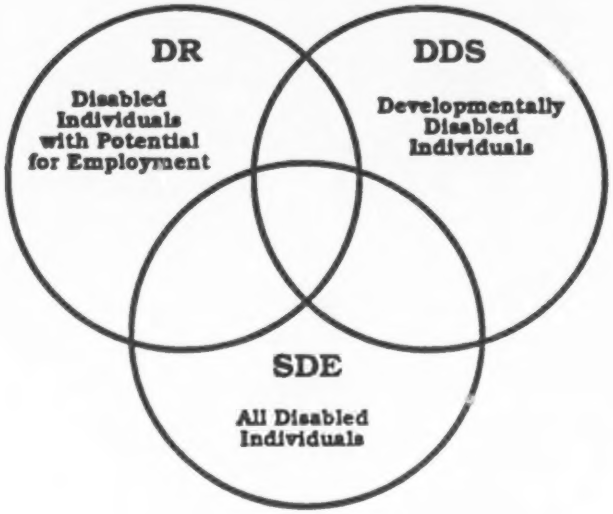
Figure 1

The Relationship of Clients and Functions for Interagency Exchange

Similar Clients


DR
Disabled Individuals with Potential for Employment
DDS
Developmentally Disabled Individuals
SDE
All Disabled Individuals

Complementary Functions

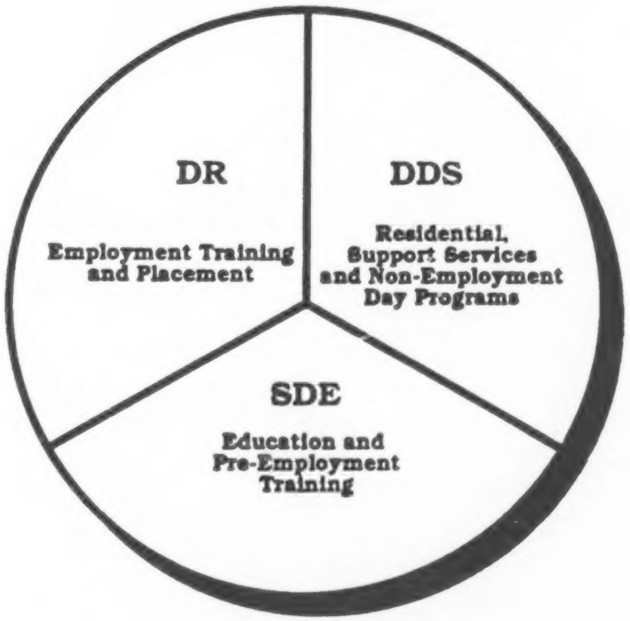
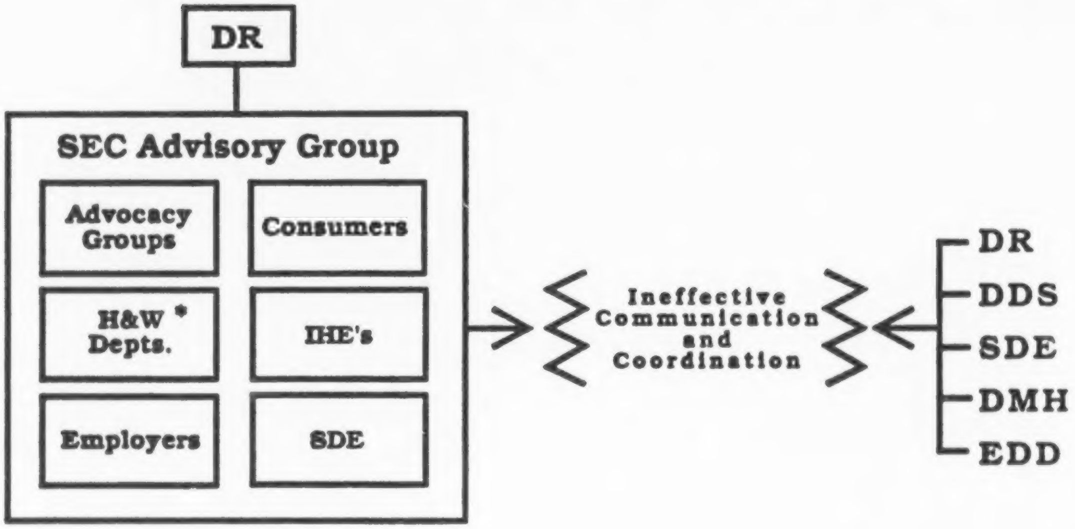

DR
Employment Training and Placement
DDS
Residential, Support Services and Non-Employment Day Programs
SDE
Education and Pre-Employment Training

Figure 2

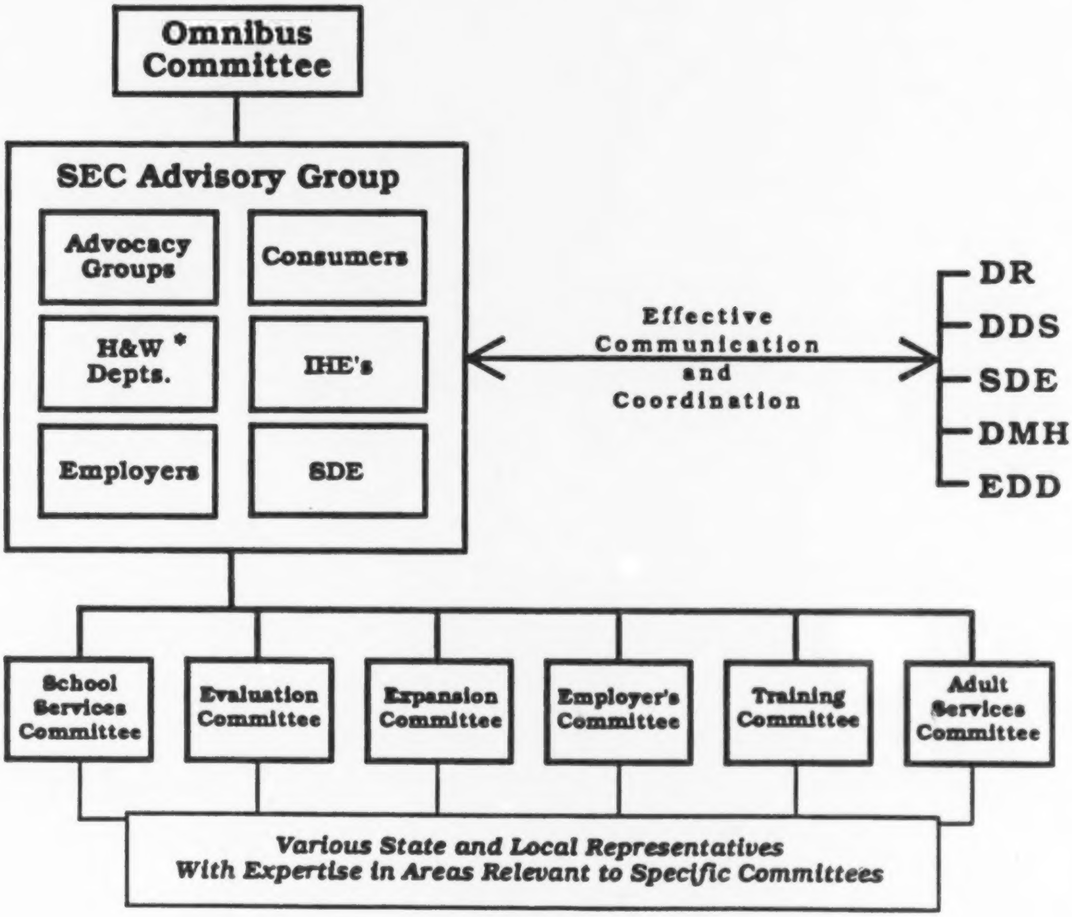
Organizational Structure of Supported Employment Consortium (SEC) Advisory Group in Year 1


DR
SEC Advisory Group
Advocacy Groups
Consumers
H&W * Depts.
IHE's
Employers
SDE
Ineffective Communication and Coordination
DR
DDS
SDE
DMH
EDD

* DR not represented in general membership of SEC.

Figure 3

Organizational Structure of Supported Employment Consortium (SEC) Advisory Group in Years 2-4


Omnibus Committee
SEC Advisory Group
Advocacy Groups
Consumers
H&W * Depts.
IHE's
Employers
SDE
Effective Communication and Coordination
DR
DDS
SDE
DMH
EDD
School Services Committee
Evaluation Committee
Expansion Committee
Employer's Committee
Training Committee
Adult Services Committee
Various State and Local Representatives With Expertise in Areas Relevant to Specific Committees

* DR included in Departments represented.

Agencies and Organizations Involved in the Supported Employment Consortium

Glossary of Acronyms

H & W's	Health & Welfare Agency and Departments of:
DDS	Department of Developmental Services
DMH	Department of Mental Health
DR	Department of Rehabilitation
EDD	Employment Development Department
JTPO	Job Training Partnership Office
SDE	State Department of Education
IHE's	Institutes of Higher Education
CCC	California Community Colleges
CSU's	California State Universities (SFSU, CSU-LA)
USF	University of San Francisco
Advocacy Groups	
SCDD	State Council on Developmental Disabilities
OAB	Assoc. of Area Boards
ARC	Assoc. for Retarded Citizens
GCEH	Governor's Committee on Employment of the Handicapped
Service Provider Agencies/Organizations	
ARCA	Assoc. of Regional Center Agencies
Cal-ARF	California Assoc. of Rehabilitation Facilities
ILC's	Independent Living Centers
Other Agencies	
SJTCC	State Job Training Coordinating Council
Consumers	
Primary Consumers	
Parents	

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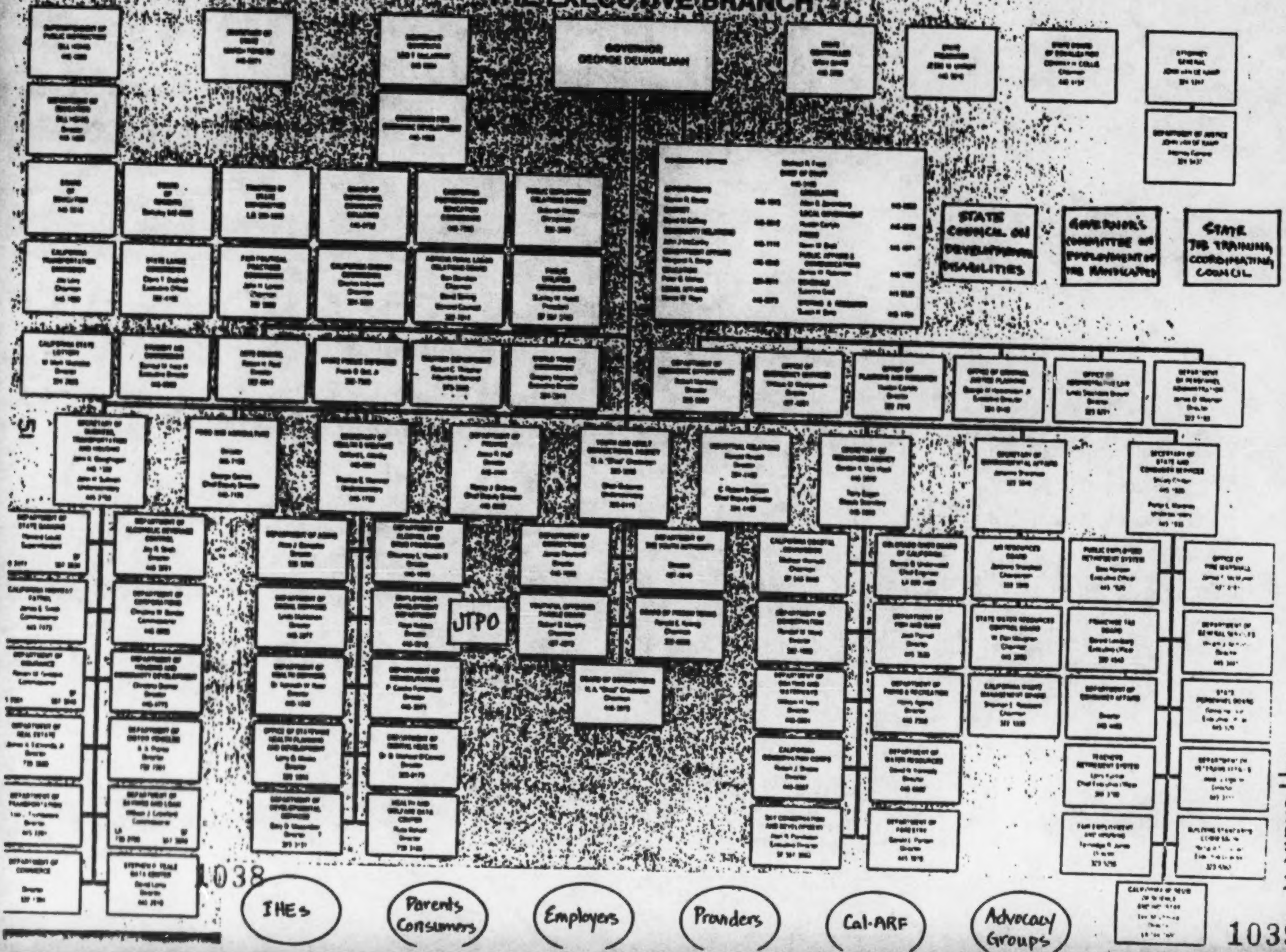
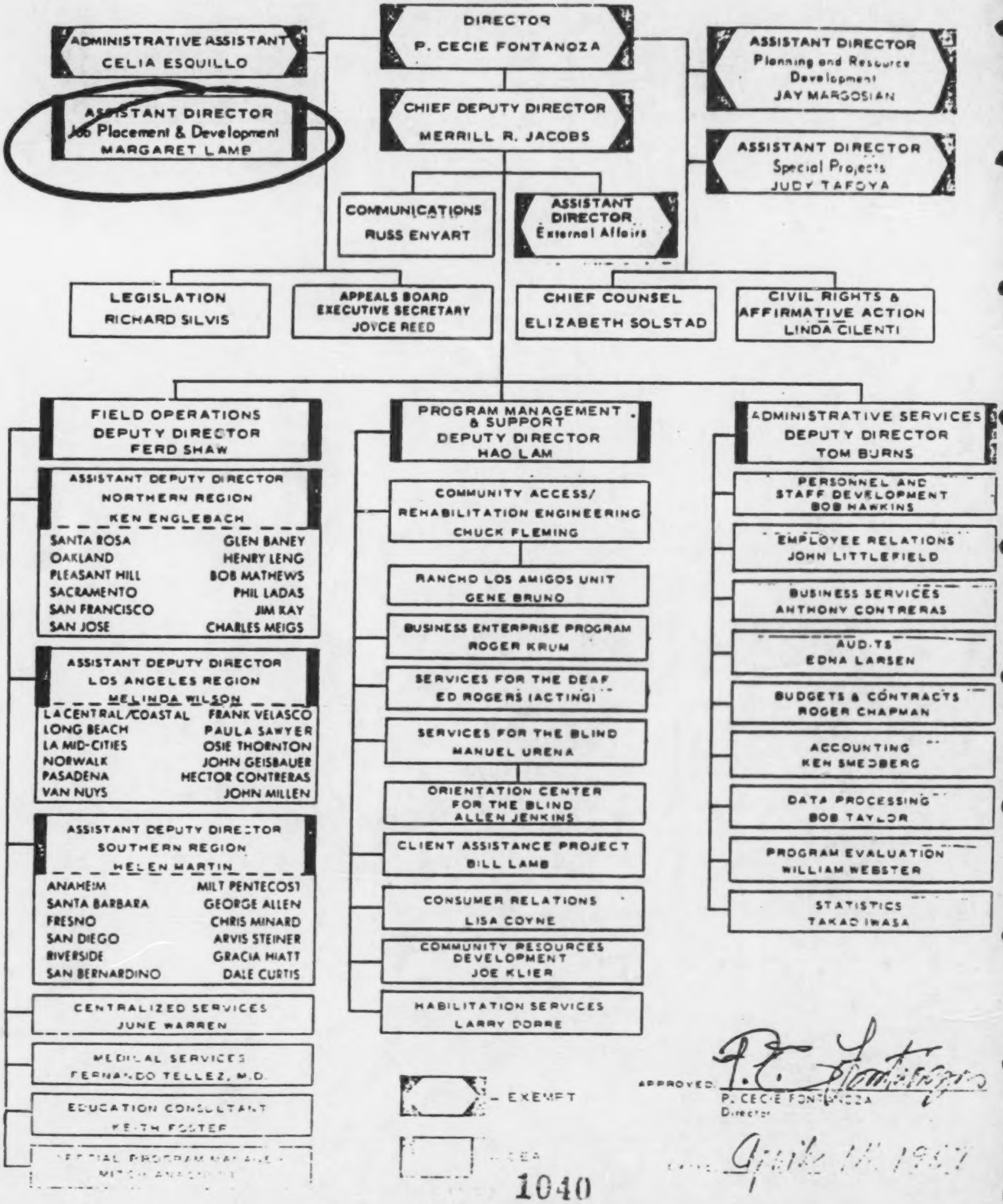
CALIFORNIA STATE GOVERNMENT
THE EXECUTIVE BRANCH


GOVERNOR
GEORGE DEUKMEJIAN
STATE COUNCIL ON DEVELOPMENTAL DISABILITIES
GOVERNOR'S COMMITTEE ON EMPLOYMENT OF THE HANDICAPPED
STATE JOB TRAINING COORDINATING COUNCIL
JTPO
IHEs
Parents Consumers
Employers
Providers
Cal-ARF
Advocacy Groups

Appendix A

Appendix B

DEPARTMENT OF REHABILITATION
ORGANIZATION


DIRECTOR
P. CECIE FONTANOZA
ADMINISTRATIVE ASSISTANT
CELIA ESQUILLO
ASSISTANT DIRECTOR
Job Placement & Development
MARGARET LAMB
CHIEF DEPUTY DIRECTOR
MERRILL R. JACOBS
ASSISTANT DIRECTOR
Planning and Resource Development
JAY MARGOSIAN
ASSISTANT DIRECTOR
Special Projects
JUDY TAFOYA
COMMUNICATIONS
RUSS ENYART
ASSISTANT DIRECTOR
External Affairs
LEGISLATION
RICHARD SILVIS
APPEALS BOARD EXECUTIVE SECRETARY
JOYCE REED
CHIEF COUNSEL
ELIZABETH SOLSTAD
CIVIL RIGHTS & AFFIRMATIVE ACTION
LINDA CILENTI
FIELD OPERATIONS
DEPUTY DIRECTOR
FERD SHAW
ASSISTANT DEPUTY DIRECTOR
NORTHERN REGION
KEN ENGLEBACH
SANTA ROSA
GLEN BANEY
OAKLAND
HENRY LENG
PLEASANT HILL
BOB MATHEWS
SACRAMENTO
PHIL LADAS
SAN FRANCISCO
JIM KAY
SAN JOSE
CHARLES MEIGS
ASSISTANT DEPUTY DIRECTOR
LOS ANGELES REGION
MELINDA WILSON
LA CENTRAL/COASTAL
FRANK VELASCO
LONG BEACH
PAULA SAWYER
LA MID-CITIES
OSIE THORNTON
NORWALK
JOHN GEISBAUER
PASADENA
HECTOR CONTRERAS
VAN NUYS
JOHN MILLEN
ASSISTANT DEPUTY DIRECTOR
SOUTHERN REGION
HELEN MARTIN
ANAHEIM
MILT PENTECOST
SANTA BARBARA
GEORGE ALLEN
FRESNO
CHRIS MINARD
SAN DIEGO
ARVIS STEINER
RIVERSIDE
GRACIA HIATT
SAN BERNARDINO
DALE CURTIS
CENTRALIZED SERVICES
JUNE WARREN
MEDICAL SERVICES
FERNANDO TELLEZ, M.D.
EDUCATION CONSULTANT
KEITH FOSTER
SPECIAL PROGRAM MANAGER
MITCH [illegible]
PROGRAM MANAGEMENT & SUPPORT
DEPUTY DIRECTOR
HAO LAM
COMMUNITY ACCESS/ REHABILITATION ENGINEERING
CHUCK FLEMING
RANCHO LOS AMIGOS UNIT
GENE BRUNO
BUSINESS ENTERPRISE PROGRAM
ROGER KRUM
SERVICES FOR THE DEAF
ED ROGERS (ACTING)
SERVICES FOR THE BLIND
MANUEL URENA
ORIENTATION CENTER FOR THE BLIND
ALLEN JENKINS
CLIENT ASSISTANCE PROJECT
BILL LAMB
CONSUMER RELATIONS
LISA COYNE
COMMUNITY RESOURCES DEVELOPMENT
JOE KLIER
HABILITATION SERVICES
LARRY DORRE
ADMINISTRATIVE SERVICES
DEPUTY DIRECTOR
TOM BURNS
PERSONNEL AND STAFF DEVELOPMENT
BOB HAWKINS
EMPLOYEE RELATIONS
JOHN LITTLEFIELD
BUSINESS SERVICES
ANTHONY CONTRERAS
AUDITS
EDNA LARSEN
BUDGETS & CONTRACTS
ROGER CHAPMAN
ACCOUNTING
KEN SMEDBERG
DATA PROCESSING
BOB TAYLOR
PROGRAM EVALUATION
WILLIAM WEBSTER
STATISTICS
TAKAO IWASA
- EXEMPT
- CEA

APPROVED: P. C. Fontanoza
P. CECIE FONTANOZA
Director

DATE: April 11, 1987

OSERS Supported Employment Consortium
Operational Design

I. Role of the Consortium

A. Proactive

1) Define/Redefine grant objectives:

   a) Specify desired outcomes.
   b) Specify systems change needed to accomplish outcomes.

2) Recommend use of grant resources.

3) Serve in an advisory capacity to each representative agency/organization in a collaborative sense, reaching agreement by consensus. Recommendations transmitted:

   a) Via member of their own agency.
   b) Via written communication from the Consortium on major issues.

B. Reactive

1) Review policies and activities which affect supported employment and related service systems as a collaborative body.

2) Make recommendations to appropriate departments and/or organizations.

II. Activities of the Consortium

A. Initiate program evaluation including:

   1) Grant objectives.

   2) Demonstration projects.

   3) Effectiveness of systems change.

B. Share information.

C. Support/encourage coordination and systems change in supported employment.

III. Responsibilities of Consortium Members

A. Seek recommendations from the Consortium on issues pertinent to individual member organization.

B. Respond to Consortium recommendations (verbally and/or in writing).

C. Implement the supported employment concept.

D. Encourage system change.

IV. Responsibilities of Subcommittees

A. To expand representation of departments and organizations.

B. To identify key issues for focus of subcommittee.

C. To serve as working unit to develop specific system change recommendations.

D. To serve as a resource to represented department or organization.

Bill Joyce
San Francisco State University and the University of California, Berkeley

INTERAGENCY PLANNING AND COORDINATION: ARRANGING COMMUNITY-BASED WORK TRAINING PROGRAMS FOR DISABLED PERSONS

INTRODUCTION

More than fleetness afoot, star halfbacks are known for their uncanny ability to "find the seam," to spot the opening by moving against the flow of defenders. Similarly, idealogues, when blitzed by bureaucratic defenses, must find pockets of support and deftly follow emerging pathways to institute change.

The field of special education, propelled by calls for fresh directions, remains bereft with stultifying governance structures stifled by the unwieldy process controls of federal regulations. The idealogue--the teacher on the front-line--needs more than the boost of a powerful idea. He needs to identify and structure areas of support to execute the novel, and necessary, approaches.

This paper aims to describe the current landscape in special education as it forms new "seams" for providing work-training to disabled secondary students. Ideas moved by professionals and advocates combine with beginning policy formulations to create openings. The teacher as idealogical entrepeneur must locate allies in the community, sell the idea of community training, and successfully forge cooperation across agencies. Two successful strategies are discussed and a third is highlighted. The common denominator to affecting and consolidating change is the idealogue piercing bureaucratic rigidity.

BACKGROUND

PL 94-142 (The Education of All Handicapped Children Act) marked the legislative climax that legally opened the schoolhouse door to disabled children. Prior to its passage, students with severe disabilities were underserved, excluded, and frequently institutionalized. Media exposes of institutional "snakepits" (e.g., Blatt and Kaplan, 1967) and the high profile of a presidential committee (President's Panel on Mental Retardation, 1962) floated an alternative policy vision of normalization. The notion of optimizing for disabled persons the patterns, norms, and conditions of life in the mainstream found a willing cast of supporters which included parents, professionals, and educators. The executive pat on the back and the rising tide of the civil rights movement of the 1960's set the stage for the newly discovered 'voice' among disabled rights advocates. Subsequent litigation not only undercut the reflex to institutionalize severely disabled youth (Rothman and Rothman, 1984), but brought individuals such as those with down syndrome into neighborhood schools. As the first generation of special education students since PL 94-142 leave school, their right to live and learn in the community is no longer at issue. Rather, their ability to do so has become the decisive criterion.

Despite the increased educational access, the post-school status of disabled persons is characterized by such articulation errors as an unemployment rate as high as 75% (Haring & Lovett, in press; Rusch and Phelps, 1987), overdependence upon parents (Mithaug et al, 1985), and social isolation (Hasazi et al, 1985). Consequently, increasing attention is being given to the need for transitional planning and the need for interagency cooperation and coordination of services to disabled persons both before and after school years (Nisbet, 1988; Johnson et al, 1987; Peters et al., 1987, Stodden and Boone, 1987; Krist et al., 1989).

Rather than the single-source service delivery system of the school, disabled persons and their parents face an array of service providers beyond the schoolhouse door. The decentralized nature of service delivery reflects the dispersal of power across federal, state and local agencies complicated further by such factors as loose coupling, vague mandates, and a legalistic predispostion (Benveniste, 1983). For example, 160 California state programs serving children and youth are administered by 37 units across seven departments, with services delivered through 20 types of agencies at the local level (Smrekar, 1989). Six state agencies with overlapping jurisdictions and mandates serve disabled children and youth. Competing regulations and turf protection isolate professionals from each other and fragments service delivery to underserved clients (Heath and McLaughlin, 1989).

Public schools are still catching up with the consequences of PL 94-142. Ironically, having barely squeezed inside the schoolhouse door, growing evidence suggests that appropriate instruction of disabled students requires instruction beyond the school (Brown et al., 1983). Since disabled students typically do not transfer skills beyond the classroom, instruction in community settings has emerged as the practice which promises to enhance functional outcomes (Donnellan and Mirenda, 1983).

Nevertheless, schools remain sluggish to accomodate departures from standard practice. The functional outcomes of special education--i.e., the prevailing conditions of unemployment, isolation, dependence, etc--currently languish far behind espoused goals to "prepare severely handicapped students for adult life." Administrators appear content to maintain the traditional setting of the classroom as the acceptable environment to teach all students. To be sure, the legalistic orientation in the special education language and process tends to reinforce programmatic caution. Community instruction raises issues of liability when curricular skills include learning to cross streets, ride public transportation, and teaching vocational skills in actual work settings. The red flag of potential lawsuits lurks behind administrative interactions with parents who are notoriously litigous.

Formal judicial redress has historically been, and continues to be, a legitimate avenue of exercising 'voice' on behalf of disabled students. However, the practical possibility for initiating change appears to lie informally at the periphery with those most likely to facillitate change, the teachers. Federal policy statements (Will, 1984) and the professional literature sufficiently legitimize new directions. Special educators on the front line, if imbued with the idealogical perspective of community-based instruction, can create the conditions and supportive networks required to make it happen. The bureaucratic apparatus can be nudged along, however reluctantly, to accomodate the process.

The remainder of this discussion analyzes two successful work training programs for disabled persons: the Career Ladder Program for mildly disabled secondary students and Project Opportunity for severeley disabled students. Given the constraints of space, I have chosen not to discuss in detail, but will refer to, my parallel experience in developing a cooperative agreement between Oakland Children's Hospital and Berkeley Unified School District to provide the vocational education setting for my junior high students. While this 'community classroom for work-training' expanded from a modest beginning and continues in my absence, the Career Ladder Program and

Project Opportunity more completely address the issue of cooperative participation among multiple agencies at the transition point between high school and adult life.

The common process is essentially one of identifying willing accomplices and seducing the crucial enablers. The idealogue-entrepeneur, in the form of the special education teacher, exploits areas of overlapping need which either previously existed or are created. Through a largely informal process, nontraditional interagency linkages are forged to set the framework of cooperation. Formal contracts spell out consensually agreed upon roles, responsibilities, and outcomes. The result approaches the professed goals of the special education bureaucracy, reflects state of the art pedagogy, and enhances the work skills and future employability secondary students with disabilities.

VOCATIONAL TRAINING FOR LEARNING DISABLED STUDENTS: THE CAREER LADDER PROGRAM

The Career Ladder Program (CLP) began in 1984 as a 'seat-of the pants' operation by Program Coordinator Shepherd Siegel to place six mildly disabled secondary students in work internshhips. Five years later, CLP has forged agreements with multiple public agencies [San Francisco Unified School District (SFUSD), California Department of Rehabilitation (DR), San Francisco State Univiersity (SFSU)], four private employers (AAA, Photo and Sound, Laguna Honda Hospital, Marriott Hotel) and serves 50 students each year. 85% of the alumni are either employed or pursuing postsecondary studies.

Siegel represents the idealogue captured by the notion of teaching vocational skills and attitudes in the actual work place. Working out of a kitchen in a financially strapped private school, his ideas of work internships in private enterprises drew a lukewarm response from his administrator. After numerous false starts, Siegel persisted and established an agreement with AAA to provide the setting for clerical training.

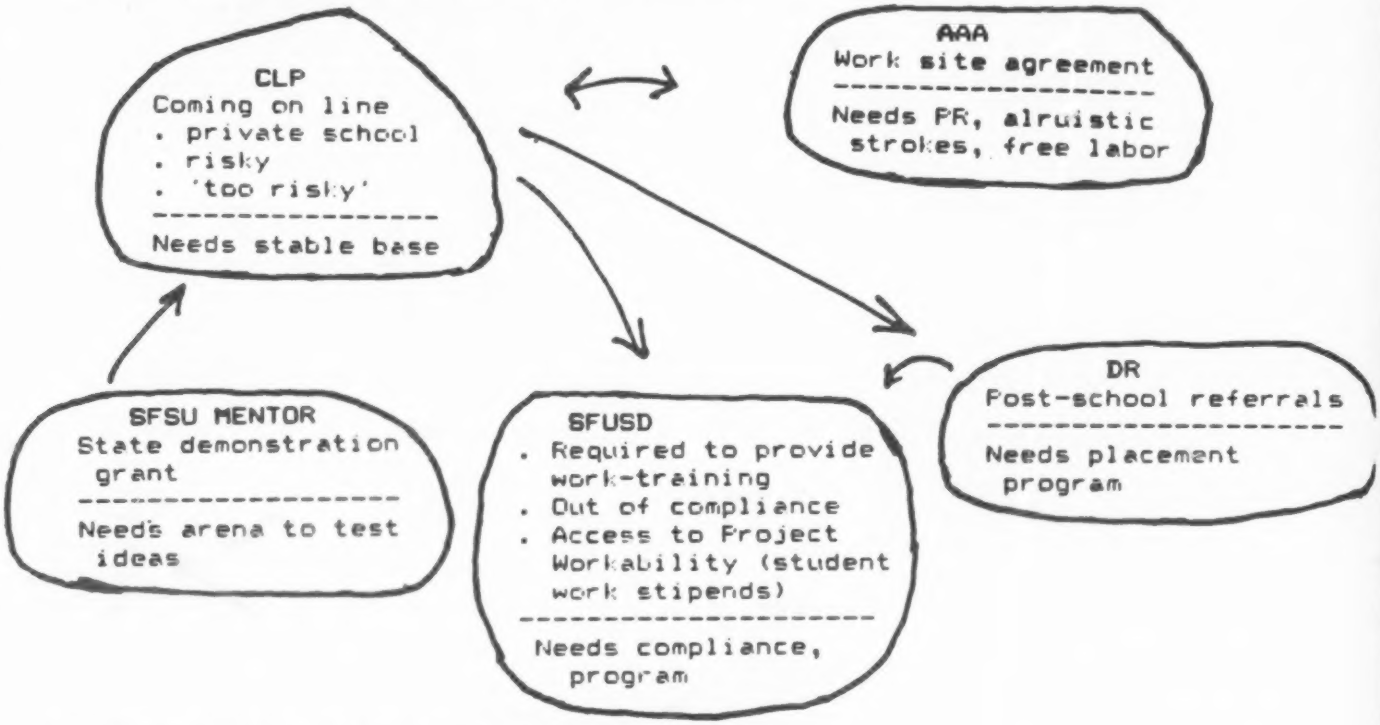
As his school dragged its feet, Siegel found support from a like-minded professor at San Francisco State University. Dr. Robert Gaylord-Ross promoted similar ideas and found in Siegel an ally who could deliver the settings in which to test his ideas further (Siegel et al., 1989) Spurred on by a state grant to develop a model of transitional work-training, Siegel jumped ship and teamed with Gaylord-Ross to bring the plan to SFUSD and DR. The participants closed ranks around the calculated risk, creating the momentum of the multiplier effect (Benveniste, 1987; see flow chart, p.7)

For the school district, the training package represented more than a ready made, low cost curriculum. Since local schools are evaluated on the basis of compliance to federal regulations, SFUSD could demonstrate that it was meeting mandated requirements to provide vocational training to secondary special education students. With renewable funding from the state, CLP became the "manna from heaven" promising minimally compliance and possibly recognition.

Recent policy intiatives urge cooperative relationships among agencies that provide special education and vocational education and rehabilitation services. Unlike special education services which are essentially an entitlement, DR is evaluated on the basis of numbers of individuals 'rehabilitated' to the workplace (Syzmanski et al., 1989). If ability to benefit from service is unlikely, DR is not required to provide service. DR funded CLP to provide training beyond the

THE CAREER LADDER PROGRAM (CLP): THE MULTIPLIER EFFECT

CLP CAREER LADDER PROGRAM (SHEPHERD SIEGEL)
SFSU SAN FRANCISCO STATE UNIVERSITY (DR. ROBERT GAYLORD-ROSS)
SFUSD SAN FRANCISCO UNIFIED SCHOOL DISTRICT
DR CALIFORNIA DEPARTMENT OF VOCATIONAL REHABILITATION
AAA AUTOMOBILE ASSOCIATON OF AMERICA



CLP
Coming on line
- private school
- risky
- 'too risky'

Needs stable base

AAA
Work site agreement

Needs PR, alruistic strokes, free labor

SFSU MENTOR
State demonstration grant

Needs arena to test ideas

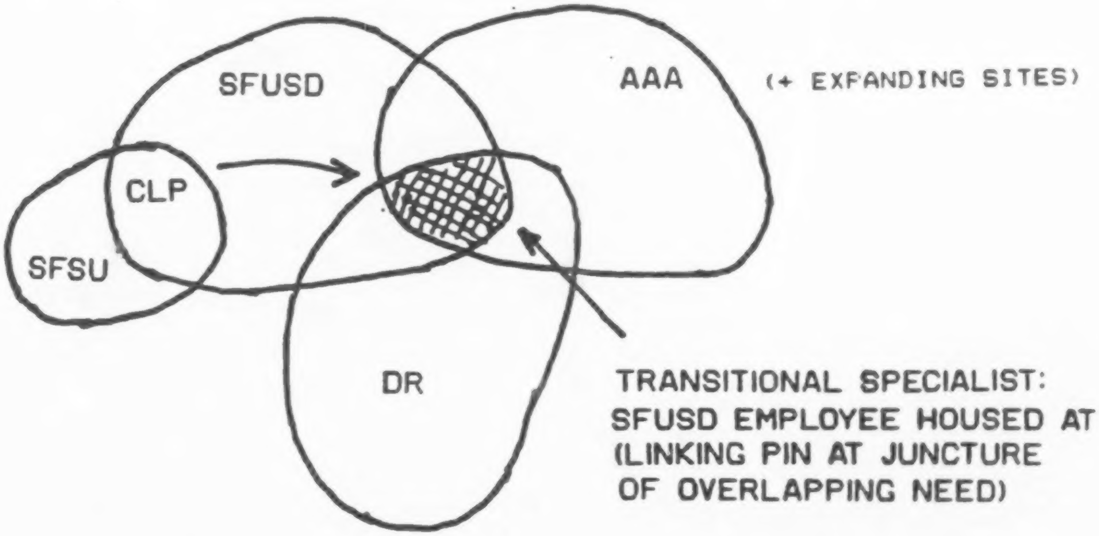
SFUSD
- Required to provide work-training
- Out of compliance
- Access to Project Workability (student work stipends)

Needs compliance, program

DR
Post-school referrals

Needs placement program

EXPLOITING OVERLAPPING NEED



TRANSITIONAL SPECIALIST:
SFUSD EMPLOYEE HOUSED AT DR
(LINKING PIN AT JUNCTURE
OF OVERLAPPING NEED)

internship phase to job placement and training. In return, CLP successfully generated case closures, the index which drives the DR system. CLP layed the golden egg in the lap of the DR counselor/ climber who delivered the services and earned a promotion in the process.

The private employers who provide the training settings were essentially seduced into the relationship. The lure of favorable media coverage highlighting their altruistic contributions opened the door and continues to provide image strokes. Of no less importance, work performed required no pay. Students worked six weeks for academic credit before receiving the minimum wage, paid by SFUSD through Project Workability (a cooperative program between the Department of Education and the Employment Development Department). Several other unexpected factors inherent to the workplace also emerged to reinforce the enterprise and enable it to move forward:

1. CLP provided an arena to secure employee and management cooperation. Negotiations to the agreement included representatives of both parties and spelled out that neither hours of employment would be reduced nor positions be eliminated as a result of the program.

2. Issues of liability--i.e., arising from work related injuries and problems in transit to the workplace--were clearly defined as SFUSD's responsibility.

3. CLP assured that work performed by students would meet the regular quality assurance standards of the business.

4. Employees, whose concerns were allayed by their representatives, proved accomodating to the students and their roles as 'mentors.'

5. As students gained proficiency, employees were freed to complete other tasks.

6. Students came to be viewed as contributers to the enterprise.

7. Several students have earned competitive employment with each of the companies. Supervised training occurred

without cost to the employer.

CLP, once an idea percolating in a kitchen office space, now earns accolades for SFUSD as an exemplary vocational training program for learning disabled high school students. The state grant, renewed annually, now flows into SFUSD and funds two transition specialists positions. The transition specialists, although paid by the school district, are headquartered at DR. Thus, the informal connections across agencies nurtured in the development of CLP, is structurally maintained in shared office space. Informal liasons with case workers, education of students needs, and consultation occur over coffee.

Siegel floated his vision, found a cadre of supporters, and received a federal grant to implement a small scale project which has grown to a comprehensive model. The idealogue as promoter of the idea in its inception and linking pin in its execution has turned "climber." Siegal is currently preparing a manuscript (Robert and Siegel, in preparation) which details the CLP experience and is under consideration for a federal dissemination grant.

'SUPPORTED EMPLOYMENT' FOR SEVERELY DISABLED STUDENTS: PROJECT OPPORTUNITY

"Supported employment" refers to the idealogy, practice and federal policy initiative which seeks to increase "normalized" employment placements for individuals with severe disabilities. (Wehman, 1981; Will, 1984). Amendments to PL 94-142 and the Vocational Rehabilitation Act and implementing regulations prioritize services to this population which requires intensive support early in job placement. Closely supervised training averages of about four months after which employers assume the supervisory role (Kregel et al., 1989). Routine follow-up and consultation averages one hour per week.

This broad policy framework and the exercise of voice by local advocates encouraged San Francisco Unified School District (SFUSD) as the lead agency to convene a committee of adult service providers and parents in 1986. The committee addressed issues of severely disabled students "falling through the cracks" of service delivery after high school. "Employment" typically consisted of attending a "work activity center" and performing periodic piece-rated package and assembly tasks in segregated settings.

After two years of educating each other of the needs of respective clienteles, program constraints, and potential service options, the individual transition plan (ITP) emerged as the "hand-off" mechanism from SFUSD to Golden Gate Regional Center (GGRC), the primary receiving case management system. SFUSD's transition coordinator, a newly created position, identifies severe disabled students and enlists the range of adult service providers one year before the students leave school. Services in the form of performance objectives implemented by a designated agency are specified on the ITP, which is reviewed annually.

Phyllis Johnston, the Director of Project Opportunity (PO), participated in the planning meetings as the parent of a disabled daughter and idealogue pushing for supported employment. PO became "vendorized" by GGRC to provide life skill training and receives funding from the California Department of Developmental Disabilities. Six persons with severe disabilities currently work part-time performing clerical, custodial, and food service tasks in six private businesses. PO services are specified in the ITP process and provide on-the-job training to students one year prior to graduation. Supervision by PO staff is gradually faded out and transfered to the employer. PO continues periodic follow-up services after the worker has successfully learned the job.

Unlike Siegel who created the web of relationships which comprise CLP, Johnston followed the more trodden path of committee meetings in promoting her vision. "Supported employment" was an "idea which had arrived" among parents and adult service agencies. SFUSD, having already bought into the CLP model of community-based work training, found in PO a similar model that would bring them into compliance. A ready-made block of supporters was brought together in the committee process. GGRC became the object of persuasion, cajoling, and education. Informal exchanges and team building leading to consensus formed the vehicle of the ITP. PO was one of the beneficiaries of the new action plan and Johnston needed only to recruit employers with enticements similar to those employed by CLP.

MACROANALYSIS: ASPECTS OF VOICE AND LOYALTY; EMPOWERING IDEALOGUES; DEFERRING PROCESS CONTROLS

The measure of lobbying efforts at the federal level on behalf of disabled persons is amply evident with the continued incremental success of legislative and policy intiatives. PL 94-142 required schools to provide programs within three years. The focus on improving employment outcomes is a function of the perceived failure of the first generation to be educated under its mandate.

The current situation is one of identifying problem areas at the transition point--e.g., the need for more nonschool instruction, the development of "hand-off" mechanisms, and accomodating student needs to adult service agencies. The clamorous calls for "interagency cooperation" remain just that--utopian drum-beating which anticipates more planned, unified service delivery systems. While a unified policy and delivery system appears necessary for all children and youth, the current mode frees professional expertise to gradually shape solutions in local contexts.

Having discovered "voice," disabled advocates appear to be modulating its pitch. Voice binds advocacy efforts to a measure of "loyalty" (Hirschman, 1970). Schools and adult service agencies are being put on notice of their shortcomings. Policy shifts, however noticable, remain relatively slight. Federal intiatives typically lack the force of mandate and the accompanying, cumbersome weight of process regulations. Loyalty sanctions complaint but defers redress. For the moment at least, the integration of the workplace relies less on procedural sanctions than the strategic delivery of resources to idealogues in search of solutions.

The vision of community-based work training has been floated. Seed grants to develop model programs such as CLP invited idealogues to step forward to put their ideas into practice. The input of funding keyed to idealogical zeal served to create a range of small scale, locally defined cooperative models. "Lead sheep" identified themselves and activated the systems within their grasp. The rhetoric of federal policy allowed CLP to engage public agencies and seduce private employers. Similarly, professed goals encouraged SFUSD to implement a planning process which built belief in the notion of supported employment and the mechanism of the ITP. Official rhetoric sowed the seeds of transitional work training and idealogues facilitated its germination. Optimized input controls provided the necessary flexibility for learning to occur and the expertise required for desired outcomes is gradually emerging.

The drum-beating for interagency cooperation and coordination can be expected to continue. Mechanisms for assessing outcomes (i.e., improved employability of students who receive work-training in the community) and dissemination shape the next round of implementation. Cooperative models need to be identified, replicated, adapted to new social environments, and expanded. From this perspective, loyalty bought time for idealogues to create work training programs and muffled the activation of voice until expertise developed. Alternatively, underfunded or inadequate dissemination threatens a reversion to rigid, sweeping social legislation and procedural controls. The strategic and expanded provision of resources to idealogues on the front line promises to further improve employment outcomes and allow the range of models for interagency cooperation take root.

MICROANALYSIS: THE IDEALOGUE'S AGENDA

Neither promising practices nor vague policy statements are typically sufficient to unfreeze traditional special education instructional patterns. They do, however, set a context to free idealogues to breathe vitality into the system. The plan requires clear communication among participants, time to build support and create belief, and the leeway to adjust the program with feedback. The working agenda demands coherence within and beyond the special education department.

1. Float, sell, and enlist key players within the organization.

Community-based work training recognizes the shortcomings of current governance structures, promises compliance and improved vocational outcomes for disabled students. The minimal cost, often the decisive factor to the beleguered bureaucrat, also eases parental complaint. These are the selling points which assure alignment within the special education department before appoaching potential work sites. Lacking internal support, Siegel left the private school and took CLP with him. Although the special education director encouraged my work-training proposal, the superintendent needed my assurance that no expense would be incurred before he signed the agreement.

2. Float, sell, and enlist allies beyond the organization.

Using contacts, making phone calls, writing follow-up letters, and arranging meetings are the informal means to making connections with other potential players. Siegel made dozens of false starts before landing AAA. Johnston endured two years of committee meetings to build a base for PO. I relied upon the parent of a student, who was also a doctor on the staff, to gain access to key personnel at my work-training site.

3. Engage all the key players in a discussion of the program.

Initiating the dialogue involves making an exploratory pitch and responding to other players' viewpoints. Differing organizational missions, eligibility criteria, funding sources, and value systems account for differing perspectives. Discussions are low risk ventures which open the lines of communication and provide the groundwork for future collaborative networks. CLP appeared to be 'pie in the sky' until it delivered case closures to DR.

4. Negotiate, define, create, and exploit areas of overlapping need. Tenuous relations require clarity to minimize risk. Addressing needs gives a basis to delegate authority to implement the program. The interagency agreement is the document ratifying roles, responsibilities, and outcomes (see agreement sample, p.17). "Exit" is an option available to each participant. My pilot program encountered union resistance. Fears were addressed and negotiated into the interagency agreement. The fact that we were relieving an employee of duties fostered acceptance and cooperation among workers. Similarly, costs issues are assessed. CLP's grant funded add-on positions and were later assumed by participating agencies. A key selling to my program was that it was virtually "free." Students paid bus fare and learned to ride to the work site. My aides and I are paid the same regardless of the instructional setting. Liability issues are also addressed.

5. Small is beautiful. And managable, particularly in the early stages. PO supports six clients in private businesses. CLP began with six students and expanded to 50. My site targeted four students to start the pilot in one department and has expanded to 12 students in 3 departments. Initial success provides the basis for expansion of the program and consolidates belief in its feasibility.

6. Implement, get feedback, and adjust as necessary. The idealogue/implementer circulates through the network and identifies and solves problems. Often a task sequence is altered to meet a student's limitations. Once my students mastered job assignments, new tasks were assumed. CLP's transitional specialist plays the role of pulse-taker, problem-solver, and messenger that the system is working.

7. Review, expand, and consolidate the intervention. Given the success of the previous steps, incrementally address emerging needs. Stage two in my program involved expanding work assignments from the housekeeping to dietary department. CLP did not engage DR until students graduated from school. Simultaneously, since dependencies are being met, the accepted components of the program "freeze" into the relationship. My program continues in my absence--the managers routinely renew the agreement and the new teacher circulates through the system. CLP's transitional specialists filter transactions actions and structurally link participating agencies.

BROKEN-FIELD RUNNING

Fragmented service delivery becomes coordinated when the roles of participating agencies are stucturally delineated and implemented at the juncture of overlapping needs. As risk subsides, work-training in community settings becomes the accepted norm. Disabled students learn marketable skills. Empowering the idealogue, by appealing to the desire for autonomy and professional ethos, and reinforced by the authority structure with status, finds the seam across agencies to minimize students falling through the cracks.

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IDS 220

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12/6/89

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Quality of Life:
Its Conceptualization and Use as a Tool for Social Policy

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Quality of Life:
Its Conceptualization and Use as a Tool for Social Policy

A high quality community environment for all people can be described in terms of opportunities for autonomy, decision-making, freedom, dignity, respect, independence, productivity, leisure, and satisfying social relations. For people with development disabilities these environmental characteristics are the goal of the deinstitutionalization, normalization, and integration movements. These goals are now within reach. This is because significant changes have occurred in the last 20 years in residential living conditions, education, access to community-based services, and employment for persons with developmental disabilities. Once consigned to institutions without hope, most individuals with developmental disabilities now remain with their families and are entitled to an appropriate education as children. As adults, community-based service models such as supported competitive employment, independent living skills training, and supported living are becoming available. While the goals for individuals with developmental disabilities have not been achieved for all, our society is closer than it has ever been to its target of equal opportunity for all individuals.

While 20 years ago crude, a dichotomous measure of "in" or "out" of an institution was an adequate indicator of progress toward the goal, today more sophisticated measures are needed to assess progress toward the target of a quality life. Because the lives of people with developmental disabilities are more closely approximating the lives of people without disabilities, measures of life quality (assessment instruments, techniques, and approaches), used widely in research with populations who are not developmentally or cognitively disabled, are now the most appropriate. Not only does this mean that characteristics of the environment be assessed in the same terms, for example, neighborhood quality, access to services, or frequency of leisure activities, but, more importantly, that people with developmental disabilities self report or respond themselves to the assessment instruments and that they are involved in articulating the life domains or factors which make up a quality life for themselves.

For all the developmental disabilities field's efforts at mainstreaming and integration, quality of life assessment has not gone far enough, we have only approximated what is possible. Typically the quality of life for people with developmental disabilities has been reported by others, professionals, direct care staff, and family members. It is important that we do not accept only this viewpoint. If individuals with developmental disabilities are not seriously included in the assessment process of their quality of life by use of self-report measures and by considering their values in life, we perpetuate paternalism and a caretaking posture. We assess quality in our own terms only. To get the full picture, the subjects of inquiry need to be included for their opinions. If we do not ask such questions of people with developmental disabilities, it is likely that they will believe that they do not have their own opinions nor the right to such opinions. If all people with disabilities are to be enfranchised, we must involve them in an assessment of their lives - their environment, activities, relations, and services. We must measure the success of social policy not only in terms of the outcomes of quality of life assessments but also in the manner in which such assessments are conducted.

The Need for Quality of Life Assessments

In the early years of deinstitutionalization an individual's continued placement in a community settings was considered the measure of successful community living. Such a simplistic, dichotomous assessment of service effectiveness has clearly been determined to be inadequate. The field has come to realize that mere placement does not make for success or normalized life activities. Community-based group residential services, living in the community with relatives or in an alternative living arrangement, does not guarantee a normal or satisfactory lifestyle (Bercovici, 1981). Various factors of community adjustment have been identified and studied which affect the success of community living for an individual with developmental disabilities. Studies have focused on the performance of daily and community living skills as measures of community adjustment (Eyman, Demaine, & Lei, 1979; Kleinberg & Gallingan, 1983; Rosen, Kivitz, Clark, & Floor, 1970; Schalock & Harper, 1978). This approach places the focus solely on the skills and often on the deficiencies of the individual. This approach does not take into account the nature of the environment itself and its affects upon the individual. Still other studies have measured lifestyle normalization and levels of integration in the community in relation to different types of residential placements (Burchard et al., 1986; Hill, Rotegard & Bruininks, 1984; Hull & Thompson, 1981; Kregel, Wehman & Seyfarth, 1985). Only recently a few researchers have begun to consider the perspective of the consumer and levels of satisfaction of persons with developmental disabilities in determining the success of a community service. Some researchers have begun to recognize that the individual's feelings of satisfaction with his/her life and with specific services is likely to influence their progress and adjustment. A few studies have attempted to comprehensively assess the quality of life of the developmentally disabled individual by using self-report and satisfaction measures. Those that are notable (Schalock, 1988; Burchard, 1989) demonstrate the developing state-of-the-art in quality of life assessment.

Litigation and legislation (U.S. Department of Education, 1989) has recognized that the civil rights of developmentally disabled persons are to be protected, including the right to speak for him/herself. Congress has recognized the value of the individual's perspective. In the Amendments to the Developmental Disabilities Assistance and Bill of Rights Act, P.L. 100-146 (1987) they have instructed the states to describe and assess the effectiveness of the service system in meeting the needs of individuals with developmental disabilities and have required that one of the sources of information be a self-report survey of a representative sample of persons with developmental disabilities receiving services. The need for measures of quality of life of developmentally disabled individuals, particularly from their own perspective, has reached the highest levels of social policy development. Assessment techniques need to be improved and these techniques adopted at all levels: programmatic and policy-making.

Factors Contributing to Life Quality

Much of the theoretical work on quality of life comes from the community psychology literature. The literature has identified a number of factors believed to be associated with quality of life. Self-esteem, control over own's life, social relations, and support networks are factors that have been identified across a number of studies investigating quality of life. Campbell (1981) reported a high correlation between levels of self-esteem and overall life satisfaction. Other studies corroborate the relationship suggesting that self-esteem is an important moderator of life experience and perception of life quality (Grecas, 1982; O'Connor & Brown, 1984; Pearlin, Lieverman, Menaghan, & Mullan, 1981). Another factor that seems to relate to quality of life is a feeling of manageability or control over one's life (Abbey & Andrews, 1985). Taft (1985) found the loss of control over one's life, for the elderly, contributed to reduced measures of quality of life. Deiner (1984) reported environmental control as a strong predictor of quality of life. Zautra (1983) found that the availability and quality of interpersonal relationships are significant contributors to life satisfaction. Barrera and Ainley (1983) identified various types of social support associated with life quality. The community psychology literature considers the individual's internal experience and perspective to be central to the assessment of the factors contributing to life quality.

These same factors have been identified in the investigation of quality of life by researchers in the developmental disabilities field as contributing to overall quality of life (Halpern, 1985; Schalock, 1986). While not examining the total quality of life picture or the perspective of the individual, researchers in developmental disabilities have contributed to the literature by investigating certain factors which contribute significantly to quality of life. Hill, Rotegard, & Bruininks (1984) looked at the family leisure and social relations and activities to measure and compare the quality of life of residents of public institutions and community residential facilities. In evaluating community integration, Kregel, Wehman, and Seyfarth (1985) considered an individual's increase in independence in performing basic living skills and in the ability to use generic community resources. In early stages of research on quality of life, Schalock and his colleagues (Schalock & Keith, 1984; Keith, Schalock, & Hoffman, 1986) identified environmental control and social relations as well as community integration as factors contributing to quality of life. Halpern (1985) developed a model of successful transition to adult life for developmentally disabled persons requiring services in three domains: social relations and networks, residential, and occupational.

Interestingly, both Schalock and Halpern have expanded their earlier models to include individual satisfaction as a contributing factor (Halpern, 1986; Schalock, 1989) to quality of life. Schalock's (1989) most recent model identified community integration and productivity as well as satisfaction as the components of overall quality of life. Recent research by Burchard and her colleagues (1989) have identified multiple factors contributing to life quality including: independence in daily and community living, social and physical integration and community access, personal adjustment and well being, social support, frequency of life stressors, degree of normalization and *satisfaction* with relationships, living and working arrangements.

Two other studies that used consumer satisfaction as measures of quality of life also addressed personal control of one's life, social relations and social support. Seltzer (1981) examined community adjustment in terms of the individual's mastery, independent performance, and motivation to perform community living skills as well as the degree to which the environment provided opportunity for independent performance. The individual's satisfaction with their residence included aspects of the physical environment, household responsibilities, social relationships, autonomy and relations with staff. Heal and Chadsey-Rusch (1985), in developing a satisfaction scale, conceptualized quality of life of an individual to include satisfaction with the community, services received, their job and their social relations and activities.

Clearly, the degree of personal control over one's life and the importance of meaningful interpersonal relationships and support are recognized as essential components of quality of life by researchers studying disabled populations as well as the general or non-disabled population. The preferred approach in the assessment of quality of life with the nondisabled population has been the measurement of the individual's satisfaction with their life and their subjective feelings of well-being. With the developmentally disabled population, there has been greater controversy over the appropriate method of assessment.

Approaches to Quality of Life Investigation

Quality of life as a field of investigation is only 50 years old. It has taken essentially two courses: the objective approach and the subjective approach. The objective approach assesses conditions external to the individual that are observable and quantifiable indices. These indices are usually referred to as social indicators and include such factors as standard of living, education, housing, and safety. The subjective approach focuses on the person's perceptions and evaluation of his or her life experiences.

The objective approach. The first studies of quality of life were done by E.L. Thorndike (1939). His approach was objective. He developed a "goodness" index or "G" score for 310 cities with over 30,00 population using weighted combinations of social statistics such as literacy, standard of living, infant mortality, etc. In the 1960's Galbraith (1964) and Bauer (1966) developed quality of life indices using social indicators as well as economic ones to chart progress in the nations institutions. They were similar conceptually to Thorndike's goodness measures but more sophisticated by theoretical and technical advances. They were objective, quantifiable and reliable enough to assess change in living conditions across time.

The subjective approach. The subjective approach has come primarily from the field of community psychology. Research has been applied in the fields of gerontology and nursing as well as mental health. Operationalizing and measuring quality of life from a subjective perspective has required the researcher to focus on the person's perceptions and evaluations of his or her life experiences. Katzner (1979) stated that quality of life rests upon the individual's perception of it; people live in an objectively defined environment but perceive it subjectively. This area of research began with the work of Jahoda (1958) cataloguing self-reports of individuals concerning their happiness, life satisfaction, and psychological well-being. Researchers have attempted to empirically identify the life domains, or range of experiences that affect psychological well-being or the perception of one's life quality. Based on a review of critical incidents of a representative national sample of 3000 respondents, Flanagan (1976) found 15 factors in five domains of quality of life: physical and material well-being, relations with other people, social, community and civic activities, personal development and fulfillment and recreation. Campbell (1981) developed 12 life domain components of quality of life: education, marriage, family life, friendship, self, health, standard of living, the country, neighborhood, housing, residence, and work.

Rice (1984) views quality of life as the degree to which the experience of life satisfies a person's wants and needs both physical and psychological. Other researchers concur that when most people conceptualize quality of life they think in terms of life satisfaction (Dalkey & Rourke, 1973; Ferrans & Powers, 1985). Others have attempted to distinguish between the concepts of satisfaction and psychological well-being as they affect quality of life. Campbell, Converse, & Rodgers (1976) found that while both happiness and satisfaction are included in quality of life, satisfaction is a cognitive dimension and happiness is grounded in affect. Andrews and McKennell (1980) found that measures of happiness contained higher affective content than measures of satisfaction.

The social-ecological approach. A social-ecological perspective, where the person-environment interactions yield the quality of life experiences has also developed (Bubolz, Eicher, Evers, & Sontagg, 1980; Russell & Ward, 1982; Reich & Zautra, 1983; Murrell & Norris, 1983). Quality of life is optimal when the individual's needs and desires can be met by the society and when the individual has adequate resources to meet the demands of the environment. Murrell and Norris (1983) proposed a quality of life model based on the principle that optimal community settings are those that are responsive to human needs as defined by the person. They have integrated quality of life assessment with needs assessment methods to identify areas for resource allocation. In their model the relative importance of any given need is defined in terms of its contribution to quality of life. Unmet needs with high quality of life value would signal a priority need for allocation of additional resources. They found that their model more accurately predicted the services which were actually needed in a community. In addition, community members were more responsive to the services identified by the model than to services identified by professionals using other means (Murrell & Norris, 1983). This approach may provide important guidance for the developmental disabilities field in identifying how services can be improved. The consumer of services can give information that will lead to the fine-tuning of the services.

Schalock and Jensen (1986) developed a Goodness of Fit Index (GOFI) to assess the match between the demands of the environment and the abilities of the individual with developmental disabilities to meet such demands. Interestingly, individuals with better "fit" were also found to have higher quality of life. The social-ecological models have important implications for policy-makers in identifying the most needed and effective use of resources. Since public policy decisions have more and more frequently depended upon quantifiable indices, the quantification of quality of life and life satisfaction, and their use in combination with environmental data, can impact on resource allocation for services.

Measurement of Quality of Life and Consumer Satisfaction

There has been controversy over objective versus subjective indicators of quality of life. A number of researchers have found that objective indicators do not correlate well with subjective measures of life satisfaction (Milbraith, 1982; Schneider, 1976; Zautra, 1983). Many researchers have discussed the highly individual nature of quality of life suggesting that personal goals and values always confound the process of measurement (George & Bearon, 1980; Landesman, 1988; Rice, 1984). Objective indicators have their value, particularly in comparing the environmental conditions of one individual or population to another. Andrews and Withey (1976) referred to quality of life as both an outsider's judgement of quality measured in objective terms and the personal evaluation of privately known aspects of life. For a comprehensive assessment of quality of life both objective and subjective perspectives should be taken into account. The subjective measures appear to be the direction in which the greatest work is needed to perfect measures that will assist us in gaining a meaningful understanding of the life quality felt, processed and acted upon by an individual with a developmental disability.

While consumer satisfaction surveying as a means of evaluating the service system is not the same as quality of life assessment, it does

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recognize the value of the individual's perspective and utilize the individual's opinion as a source of information. Measures of consumer satisfaction are just beginning to be used as part of quality assurance investigations and community needs assessment in the developmental disabilities services field. More attention to the opinions of service recipients is needed in the field if consumers are to exercise their right to be involved in their treatment.

Validity and Reliability of Consumer Input

While obtaining information directly from individuals with developmental disabilities is philosophically desirable, it has presented problems with validity and reliability. Many individuals with developmental disabilities have difficulty with receptive and expressive communication. Researchers have typically relied on a third party to provide information about the individual's life as well as their level of satisfaction, opinions, or perspective. While, occasionally, first hand accounts of the experiences of cognitively impaired persons have been published (Stanovich & Stanovich, 1979) and their opinions solicited directly by policy-makers (Nirje, 1972) and researchers (Gollay, Freedman, Wyngaarden, & Kurtz, 1978), the more typical approaches used to obtain information have been highly structured interviews or tests. These are the approaches often used in consumer satisfaction and quality of life assessments. The validity of the information gained in this manner from individuals with problems with communication may be suspect and require special treatment.

Sigelman and her colleagues have investigated the capabilities of individuals with cognitive impairments to provide valid information under the structured interview format (Sigelman et al., 1980; Sigelman, Budd, Spangel, & Schoenrock, 1980a, 1980b). They found the ability to respond to questions and the likelihood of providing consistent and verifiably correct information were positively correlated with level of intelligence. The tendency to acquiesce (say "yes") was negatively correlated with intelligence. Acquiescence was found to be very high, 44% to 60% of individuals with mental retardation, and the most problematic form of responses bias. No differences in results were found between individuals living in institutions and those living in the community (Sigelman et al., 1980).

Further investigation found that although responsiveness to questions was slightly reduced, greater consistency and accuracy of responses were obtained with either/or questions. The use of pictorial representations of response choices improved responsiveness to questions and consistency of answers and no response bias was found (Sigelman et al., 1980a). The wording of questions requiring a yes/no response was also investigated. It was found that acquiescence was reduced when the information necessary to respond to the question was concrete and readily available to the interviewee. Acquiescence increased when the question was not understood or the correct answer was unknown (Sigelman et al., 1980b).

The implications of this research are significant. The acquiescence phenomenon not only inflates figures for an entire sample but will obscure differences between individuals and intelligence levels within the sample. Far from negating the validity of information that can be provided by persons with cognitive impairments, the research points up the necessity for researchers to design instruments that take into account the type and wording of questions. Clearly yes/no response items should be avoided. If they are used, Sigelman suggests that responses be confirmed with another informant and that a check for acquiescence within the test structure be developed, e.g., item reversals, and that interviewees found to be highly acquiescent be eliminated from the study. The wording of questions needs to be in concrete terms and about topics known to the interviewee. Pictorial and non-verbal approaches need to be used especially with individuals with lower intelligence levels (Mithaug & Harrawalt, 1978).

It is crucial to grapple with getting valid answers so that individuals with cognitive impairments can have an opportunity to speak for themselves in meaningful ways and have their opinions respected for their accuracy. Indications in the research that acquiescence functions to cover for ignorance and to obtain social approval indicate that researchers, families, and service personnel need to find ways to encourage and reinforce individuals for expressing their opinions rather than for compliant behavior.

Quality of Life Research and Assessment

The following review of quality of life research and assessment that utilized the perspective of the individual with developmental disabilities, represents an exhaustive search of the literature. While quality of life is referred to by many, studies that actually attempt to conceptualize and operationalize the term are few. Those that endorse using the individual's own perspective are fewer still. Those few studies are reported here.

Quality of residential and community life. Quality of life measurement that incorporates the consumer's perspective has taken different directions. One approach has focused on developing scales of an individual's satisfaction with residential and community environments only (Heal & Chadsey-Rusch, 1985; Seltzer, 1980). Another approach has developed an index of overall quality of life using self-reporting of observable behaviors, conditions, or indicators as well as satisfaction with environmental factors (Keith, Schalock, & Hoffman, 1986). A third approach has been to use multiple measures and seek information from both the developmentally disabled individual and a collateral informant. The individual provides information on lifestyle satisfaction and self-assessments of social support systems and life events and the informant provides information on the degree of normalization, adaptive behavior and community adjustment of the person (Burchard et al., 1989). These approaches have several factors in common. They all address the social support and friendships of the individuals, community services, and environmental setting from the individual's perspective. They all include the individual's satisfaction with these factors.

Based on the belief that the preferences of individuals with developmental disabilities regarding the community-based services they receive was the most central question in the evaluation of deinstitutionalization, Heal and Chadsey-Rusch (1985) developed the Lifestyle Satisfaction Scale (LSS). The LSS assesses an individual's satisfaction with their residence, friends, community environment, and community services. In light of the methodological problems of assessing responses of individuals with cognitive impairments, this research focused on developing a statistically reliable instrument that would measure satisfaction and take the problem of acquiescence response bias into account. The final 29 item LSS is the result of several field testings and revisions. Item test-retest reliabilities and item analysis procedures were used to eliminate unreliable items and to identify the subscale structure. Through factor analysis (SPSS) only those items that added new information were retained and were clustered into subscales.

Statistical procedures were developed to adjust for acquiescence bias. A yes/no response format was used in order to increase the responsiveness of individuals with lower intelligence. However, since items requiring a yes/no response are subject to acquiescence response bias, a number of specially worded items on the scale were included to assess response bias. Items were worded in such a way that a yes answer indicated dissatisfaction, e.g., "would you like to move back to (the institution)?", and paired with an alternative question requiring a no answer to indicate consistency or response, e.g., "do you like living (here)?" A statistical formula was developed to adjust scores based on assessed level of acquiescence and one of the subscales produced a score of the individual's level of acquiescence.

Construct validity of the LSS was demonstrated by it being able to discriminate between two different groups of individuals participating in the field test. An analysis of covariance was done to see if the LSS could discriminate between participants living in group homes and those living in apartments. The participants (N=25) in the final field test of the LSS were from two types of residential settings: group homes and apartments. The apartment dwellers were between the ages of 21 and 67, had IQs ranging from 47 to 97 with a mean of 64 and 66% were employed competitively. Those living in group homes were between 20 and 61 years of age with IQs from 22 to 72 with a mean of 56. These two groups represent two very different points in a continuum of restrictiveness in residential services. Though the apartment dwellers varied in their abilities and interest to explore the community, all were in control of their daily decisions. Residents of the group homes (ICF/DD) had a regimented schedule of daily activities. The study hypothesized that the more the living conditions of a individual approximated those of the nondisabled population, the more satisfied the individuals would be with their lifestyle. The higher score on the LSS of apartment dwellers supported the hypothesis that satisfaction is correlated with less restrictive settings.

Similar findings were made in several studies conducted by Schalock and his colleagues (Keith, Schalock, & Hoffman, 1986; Schalock & Hoffman, 1986; Schalock, 1986; Schalock & Keith, 1984; Schalock & Lilley, 1986), using the Quality of Life Index, an instrument especially designed to increase responsiveness and accuracy of the individual with developmental disabilities completing it. They conceptualized quality of life as being a composite of factors related to the degree of environmental control, the level of involvement in the community and the nature of social relations experienced. Each of the 28 criterion-referenced items on the questionnaire is answered on a three point Likert scale, i.e., each point on the scale was clarified by descriptors of observable behavior or in concrete terms. This approach avoided the use of yes/no responses subject to acquiescence bias. Although an approach increasing response choices may reduce the ability of some individuals to respond, the phrasing of questions and response choices in concrete, behaviorally based terms is likely to increase response capability and accuracy of responses. The instrument could also be completed by an informant with the subject or by the investigator based on observation of the subject. In this way the instrument could be used with persons who are non-verbal.

Standardization of the instrument using scores for 450 individuals involved item analysis, inter-item correlations and factor analysis. Inter-item correlation averaged .83 ($p < .001$). Subject-informant reliability was also .83 ($p < .001$). Factor analysis identified three clusters related to environmental control, community involvement and social relations. The questionnaire significantly demonstrated the ability to discriminate between different groups of cognitively impaired individuals based upon differing living and work situations, between individuals with cognitive impairments and their nondisabled neighbors and between disabled and nondisabled elderly persons. The more nearly the individual's living situation approximated normal community life, the higher the score. Individuals whose job status was more normalized, i.e., competitive, supported employment or on-the-job-training scored higher than those in sheltered work. Small group home and apartment living independent living trainees scored higher than individuals in larger group homes, ICF/MR residences or parental homes (if adults) and individuals living independently scored the highest. Cognitively impaired individuals scored lower than their nondisabled neighbors (within a two block radius). Elderly disabled individuals also scored lower than nondisabled seniors.

A new version of the Quality of Life Index has incorporated the concepts of client productivity and satisfaction and is currently being field-tested (n=500) on developmentally disabled and nondisabled individuals. Pilot testing and factor analysis of the new version has resulted in four subscales: independence/empowerment, community integration/social belonging, productivity/competence and satisfaction (Schalock, 1989b). Interestingly, Schalock has found it important enough to include satisfaction variables in spite of their subjective nature (Schalock, 1989c). The questionnaire retains the three-point Likert scale and response choices to the satisfaction items are clarified in as concrete terms as possible.

According to Burchard et al. (1989), the examination of quality of life of individuals in community programs is a multifaceted enterprise requiring a wide variety of measures. In particular, they indicated that personal and social factors needed to be ascribed greater importance,

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particularly, satisfaction and adjustment from the point of view of the persons themselves. They conducted a statewide three year (1985 through 1987) longitudinal study comparing quality of life factors of individuals with mental retardation living in three types of community settings in Vermont: small group homes, supervised apartments and homes with their own family members. The 114 mildly and moderately mentally retarded participants were all unmarried adults between the ages of 23 and 55 (therefore, out of school and of employment age) who were able to respond to simple interview formats. These criteria were chosen in order to be able to examine the adjustment and integration of individuals who did not differ dramatically with respect to individual characteristics and who could provide information from their own perspective.

The most important difference between individuals within the settings was level of retardation. There were similar ratios of mild and moderately mentally retarded individuals in family homes and apartments. However, in group homes there was a larger proportion of moderately retarded individuals. Forty-two of the participants lived in small groups homes for three to six persons located in residential neighborhoods. The group homes staffed by one to two persons at a time provided 24 hour supervision and habilitation services. Thirty-eight individuals lived in supervised apartments in the community occupied by one to three individuals. Staff provided training as needed but did not provide 24 hour supervision. Thirty-four of the participants lived with parents or other family members in private residences. The level of care and supervision was not regulated by the state and varied as the families deemed necessary. All the participants remained in the same setting throughout the three year period. A normative sample of 27 nondisabled adults of similar description also participated.

Information was collected from informants and from participants. Collateral informants (parents and staff) responded to instruments measuring levels of adjustment (performance of daily and community living skills) and opportunities for autonomy and skill performance (Community Adjustment Scale, Seltzer & Seltzer, 1976); a Lifestyle Normalization Interview (Burchard et al., 1987) measuring the age-appropriate activities responsibilities, integration and autonomy both within the residence and in the community; a subscale of the Woodcock-Johnson Psychoeducational Battery, Scales of Independent Behavior (Bruininks, Woodcock, Weatherman, & Hill, 1984) measuring problem behaviors; and a survey of recent (previous 12 months) life events of the participant (adapted from Holmes & Rae, 1967).

Individual participants responded to two self-report measures during a structured interview. The Social System Self-Assessment (adapted from Weinburg, 1984 by Rosen et al., 1986) assessed the size, nature, supportiveness and reciprocity of the participant's social network. The Resident Satisfaction Interview (adapted from Seltzer, 1981 to eliminate acquiescence response bias) measured satisfaction with work or day program, residence and personal well-being.

Results of the study indicated that individuals living in supervised apartments had social support systems that, while smaller in size, most closely approximated the make-up of their nondisabled cohorts, consisting of both disabled and nondisabled persons, family and peers. The nondisabled persons in the support system, however, were not peers but staff, family or older individuals. Individuals living with family had similar numbers of persons in their social support system but even greater dependence on family and fewer peers. Satisfaction of the apartment dweller and those living with family with their support system was high, as high as the nondisabled group with their support system. Those living in group homes had larger social support systems but they were made up almost entirely of disabled peers who were housemates and nondisabled staff. Satisfaction was lower than that of individuals in the other two residential settings.

The personal satisfaction and well-being of those living in apartments and with family was higher than those living in group homes. From the perspective of the participant, well-being and satisfaction with residence appeared to be strongly related to level of social support. When information from collateral informants was taken into account individuals living in supervised apartments appeared to have the greatest overall quality of life. These individuals had more normalized lifestyles with the greatest level of integration in the community, the greatest opportunity for performance of daily and community living skills and, the highest levels of autonomy. Level of retardation was not related to factors of personal satisfaction, behavioral adjustment, or characteristics of social support networks. Functional level was related to performance of skills, lifestyle normalization, and social integration with nondisabled peers. It is the opinion of Burchard et al. that this result is not a function of ability but a function of opportunity provided by residential setting. While individuals living in family homes had similar capabilities and satisfaction levels to those living in apartments, they lacked autonomy and had less normalized lifestyles.

The findings of the studies conducted by Burchard and colleagues (1989), Heal & Chadsey-Rusch (1985), and by Schalock and colleagues (Keith, Schalock, & Hoffman, 1986; Schalock, 1986; Schalock & Lilley, 1986) are mutually supportive. Findings from the objective self-report measures (Schalock) and from collateral informants (Burchard) are consistent with subjective self-report measures (Heal & Chadsey-Rusch & Burchard). From the perspective of the individual with disabilities, high quality of life is related to the opportunity for independent performance of daily and community living skills in integrated settings with support from a system of peers, family and other helping individuals and meaningful relationships. These few studies demonstrate the state-of-the-art in quality of life assessment. These approaches need to be further refined and utilized by additional researchers to build a strong knowledge base, similar to that in community psychology.

Quality of work life. The preceding studies have dealt with quality of life as it pertains to a person's place of residence, their integration in the community and their relationships with others in their environment from their own perspective. Employment has not been adequately addressed in these studies with respect to how it affects quality of life. Some controversy has existed over whether employment should be viewed as separate from other aspects of life quality. In response to Will's (1984) position that transition was a process that lead to employment as an outcome and that employment would in turn influence adjustment, Halpern suggested that multiple outcomes must be articulated to gain full understanding of transition and community adjustment. His model proposed that in addition to employment, key dimensions of transition also included residential and social relations and support. His model was based on analysis of responses to in-depth interviewing and participant observation of 863 individuals in semi-independent living programs in four western states (Halpern, Close, & Nelson, 1986). He found that the three domains (social, residential, & occupational) were not correlated, that is, success in one domain did not result is successful adjustment in the others. Further factor analysis of the data supported a fourth dimension, satisfaction with life (Halpern, Nave, Close, & Nelson, 1986). The only significant intercorrelations were between satisfaction and conditions of the residential setting and between satisfaction and social support. No significant correlation occurred between employment and overall life satisfaction. Halpern concluded that program interventions must be aimed at each domain separately: residence, social support, and employment.

A few studies have addressed the quality of work life and the affect of work on life quality. Inge, Banks, Wehman, Hill, & Shafer (1988) conducted a study comparing the quality of life of individuals in supported employment with individuals in sheltered workshops. Twenty individuals with mental retardation placed in supervised competitive employment were matched with a control group of similar individuals who remained in the sheltered workshop. A variety of measures were used to assess quality of life, including the American Association for Mental Deficiencies (AAMD) Adaptive Behavior Scale (ABS) (Nihira, Foster, Shellhass, & Leland, 1974), completed by someone familiar with the participant; a number of health measures, e.g., pulse rate, blood pressure, hand strength and body fat content; and a Parent/Guardian Survey (PGS) completed by the parent. The PGS assessed the degree to which the participant performed independently, with assistance or not at all, a variety of daily and community living skills. While results indicated little change in the ABS ratings of the experimental group and no difference between the groups on the physical health measure, the PGS showed increases in community participation, social vocational skills and money management activities for the experimental group and no changes or decreases with the control group. While this study found improvements in integrative activities as a result of supported employment services from the parent's perspective, it did not attempt to assess these factors from the participants own view or their degree of satisfaction with their new job.

According to Moseley (1988), there has been little emphasis in the literature on supported employment on the individual's satisfaction with their work. As with the early stages of development in the assessment of residential and community living adjustment as it relates to quality of life, the focus in supported employment literature has been on procedures, strategies and structures, and on objective outcome indicators such as, wages, months of employment and types of job; not on subjective factors.

By contrast, the literature on work for nondisabled populations has focused on job satisfaction (Locke, 1983). The first studies on job satisfaction occurred in the 1930s with the "Hawthorne" studies that examined social factors influencing job satisfaction and employees' attitudes to supervision, the nature of the job and the work group (Roethlisberger & Dickson, 1939). Studies in the 1960s focused on the nature of work as a determinant of job satisfaction and the need to allow worker responsibility and judgement on a task (Hertzberg et al., 1959). Driven by the desire to increase profits through increases in productivity and efficiency, business and industry have supported research to isolate the components of the job that affect satisfaction (Goode, 1989). Walton (173) identified issues involved in quality of work life: a) adequate and fair compensation; b) safe and healthful working condition; c) opportunities to use and develop personal capabilities; d) opportunity for continued growth and security; e) social integration in the work organization (e.g., freedom from prejudice, support system, egalitarianism); f) consitutionalism in the workplace (e.g., personal privacy, freedom of speech, due process); g) work and life space (e.g., psychological and social costs of changes in personnel and work loads);

and, h) social relevance of work to life. Assessment of these factors includes both objective appraisal and subjective feelings. Typical items cover feelings and commitment to the organization, pay and benefits, job security, management policies, relation with supervisor, advancement issues, relation with co-workers, characteristics of the job, and overall satisfaction (Bowditch & Buono, 1982).

In a comparison of job satisfaction studies of disabled employees with studies of nondisabled employees, McAffee (1986) found that factors of concern to both groups were similar. Both groups became dissatisfied with their jobs for the same reasons: pay, participation in decisions, leadership, hours, and co-worker interactions. Both groups were most satisfied when the match between the characteristics of the job and the employee's personal/social needs, feelings of significant and worth, and expectations for the work experience were good.

The field of developmental disabilities can benefit from the efforts in quality of work life research on the nondisabled population. Seltzer (1984) adapted a job satisfaction instrument, the Job Descriptive Index (JDI) (Smith, Kendall, & Hulin, 1969) for use with developmentally disabled individuals. The original index had been successfully used with blue collar workers with limited abstract verbal abilities and had undergone statistical validation by its original authors. While response choices were yes/no or not sure, the instrument controlled for acquiescence response bias by matched sets of favorably and unfavorably worded items about a topic. Using the adapted version of the JDI, Seltzer assessed the job satisfaction of 65 cognitively impaired individuals that she classified into four groups:

1) unemployed, but previously competitively employed (downwardly mobile);

2) employed in a sheltered workshop, but no other types of previous employment (stable);

3) employed in a sheltered workshop, but previously competitively employed (downwardly mobile); and

4) competitively employed (stable or upwardly mobile).

Results indicated that job tasks and relations with co-workers and supervisors were correlated with overall job satisfaction while pay and promotions were not. For stable and upwardly mobile workers, there was greater satisfaction with tasks, co-workers, and promotions. Downwardly mobile individuals expressed dissatisfaction with previous supervisors. Those individuals working in sheltered workshops either wanted and/or were looking for competitive jobs. Using the Community Adjustment Scale (Seltzer & Seltzer, 1976) and ratings by job supervisors, Seltzer compared job satisfaction with various community living skills and adjustment measures. Individuals most satisfied with social relations with co-workers and supervisors were more satisfied with social relations outside of work. These individuals were socially more competent and confident in all settings. The results of this study indicate that the social environment at work, as well as the job task, affects job satisfaction.

In a qualitative study of severely handicapped individuals in supported employment who had previously been in a sheltered workshop program, Moseley (1987) found the workers were more satisfied with their competitive jobs because of factors related to their job tasks, specifically because they received better pay, had more consistent work and could work without distractions. While these two studies concur that job satisfaction is related to job tasks, the Moseley study also attributes satisfaction to pay while the Seltzer study focuses on social relations at the work place as more important.

Quality of Life and Secondary Education Follow-Up Studies

The proceeding studies have investigated quality of life with small selected samples of individuals with developmental disabilities for research purposes. Quality of life assessment can be used to evaluate program effectiveness. The evaluation of the effectiveness of transition services in secondary special education can use quality of life assessments.

An accepted goal of education is to improve the quality of life of students (Edgar, 1988). Certainly one of society's major expectations is that schools will prepare students for entry into the world of work and self-sufficiency. The transition initiative (Will, 1984) has been education's approach to preparing students with special needs for entry into that world of work and self-sufficiency. The need for the transition initiative was easy to document: among disabled adults high unemployment, difficulties with community adjustment, poor living conditions, poor financial resources, restricted postsecondary education opportunities, personal and social problems from victimization to loneliness, and poor social support networks (Halpern, 1988). Since Will's initial model focused on employment as the key to successful transition, however, it has become widely accepted that transition and adult life include more than employment (West, 1988; Halpern, 1985; Edgar, 1988; Wehman, Moon, Everson, Wood, & Barcus, 1988). Large amounts of energy and resources have been focused on special education students in transition. Legislation has demonstrated that transition is a national priority (Carl D. Perkins Vocational Education Act, P.L. 98-524, 1984; Education of the Handicapped Amendments of 1983, P.L. 98-199;

reauthorization of the Rehabilitation Act, P.L. 99-506, 1986; the Employment Opportunities for Disabled Americans Act, P.L. 99-643, 1986; and the reinstatement of the Targeted Jobs Tax Credit in the Tax Reform Act of 1986, P.L. 99-514). Changes in special education have been implemented without a clear understanding of their impact on quality of life.

While a moderate amount of research has been done on the postsecondary school status of adults previously in special education (Crites, Smull, & Sachs, 1984; Mithaug, Horiuchi, & Fanning, 1985; Wehman, Kregel, & Seyfarth, 1985; Zetlin & Turner, 1985; Hasazi, Gordon, & Roe, 1985; Edgar & Levine, 1986), these studies were typically conducted separately from the design and implementation efforts of local or state education agencies. At the state and local school levels planning and implementation efforts have been emphasized. However, increased attention to accountability and fiscal constraints in education are requiring that transition efforts be evaluated (West, 1988; Halpern, 1988a).

Just as the implementation of transition must include attention to quality of life issues including community, transportation, housing, recreation/leisure, social support, autonomy and choice as well as employment, so must the evaluation of transition address these factors. Unfortunately, most follow-up studies of special education graduates/school leavers are employment related, do not address other domains, and do not utilize the individual's perspective (Edgar, 1985, 1988; Halpern, 1988b; Wehman, Moon, Everson, Wood, & Barcus, 1988).

Until very recently few resources have been available to schools to evaluate transition, that is, to do follow-up or follow-along assessment. In Oregon two thirds of responding schools in a statewide survey did no follow-up data collection (Halpern, 1988a). In Illinois no follow-up data on special education school-leavers was collected. As a result schools are unable to evaluate the effectiveness of specific services, or determine existing or future needs for service delivery (Wehman, Moon, Everson, Wood, & Barcus, 1988).

The purpose of a follow-up study is to describe the current status of adults previously served by special education, to discover causal relationships between services and outcomes, to change the service delivery system, and to inform consumers (Edgar, 1985; Halpern, 1989). In the last few years, certain states have begun data collection efforts, other states are planning follow-up studies. A National Association of State Directors of Special Education (NASDSE) study reported that of 41 states responding to a survey of state directors (50 states, D.C., and territories) regarding the collection of follow-up data, 17 were not and did not intend to collect data on exiting special education students beyond that required for federal reporting purposes; 12 were collecting data (California, Delaware, Florida, Idaho, Iowa, Maryland, Michigan, Minnesota, Nebraska, New York, Pennsylvania, and Washington); and nine reported a desire or intention to collect data (NASDSE, 1989). The state education agencies (SEA) responding positively to the survey are collecting data in all or part of four broad areas: employment and postsecondary education; quality of life variables (e.g., satisfaction with life, interpersonal relationships, community adjustment); achievement of goals set during transition planning; and curriculum experiences and vocational placement while in school (see Appendix A for descriptions of studies in various states). Some of the SEAs are approaching the assessment from the student's perspective with self-report and satisfaction surveys, notably California, Idaho, Iowa, Michigan, Minnesota, Nebraska, and Washington.

In California, the SEA is conducting a two-year follow-up pilot study (The Interagency Transition Demonstration Project) of secondary age students exiting the education system. The study includes both special education and general education students in a total of eight high schools in four counties in the state (n=700). The special education population component of the sample is comprised of all students classified as Learning Handicapped and Severely Handicapped in the identified schools, general education students make up the balance. Data are collected upon exiting school and again one year after leaving. An extensive interview is conducted by school personnel either by telephone or in person according to the preference of the respondent (the student or the student with assistance from a parent or informed adult). The exiting student interview instrument includes items about the degree of choice in courses taken, the nature and satisfactoriness of school courses and experience including work experience, and the nature and satisfactoriness of their current living situation, activities, social relations, support and decision-making, and future plans. The post-school follow-up interview (completed one year after leaving school) instrument includes items on their living and work status, what they felt were the most effective services while in school and since they left school. Quality of life measures include the nature of and satisfaction with their living situation, activities, social relations support and decision making. The study is part of the California Transition Model that incorporates local interagency teams to facilitate effective transition planning and the development of Individual Transition Plans (ITP) for all special education students by age 14 in addition to data collection (NASDSE, 1989). The purpose of the follow-up data collection is to determine the impact of the transition model in effecting student's quality of life outcomes (Winget, 1989).

Quality of Life Studies at the State and Federal Level

Investigations of quality of life issues have just begun to be considered on a national scale by the Office of Special Education and Rehabilitative Services (OSERS), the Administration on Developmental Disabilities (ADD), and at the state level. Quality of life assessments have been incorporated into court-ordered evaluations of state-level deinstitutionalization efforts (Conroy, Feinstein, & Lemanowicz, 1986; California State Council on Developmental Disabilities, 1988). According to Conroy et al. (1986) quality assurance must occur at many levels: state, case management, direct care, advocacy, IPP review, family and consumer, but the most important level is that of the individual. Quality programming should be able to demonstrate measurable outcomes in skills and behavior but most importantly in happiness, satisfaction, increased status, integration, and acceptance. Such data can only be acquired from primary and secondary consumers.

OSERS contracted with Berkeley Planning Associates (BPA) to develop client and programmatic performance objectives for supported employment. They also conducted a feasibility study for assessing the identified objectives. BPA involved supported employment program directors, state and federal administrators, researchers, and advocates from around the country as an advisory group in formulating their recommendations. A remarkable degree of consensus was achieved in identifying six broad areas of program performance objectives: meaningful work, compensation, on-gong support, work site integration and community participation, quality of life and community change. To assess these areas, client-level measures were believed to be most appropriate:

participant characteristics, employment outcomes, quality of employment, work site integration, on-going support, and quality of life in addition to measures of system change and program costs. However, when it came to actually identifying available instruments and determining feasibility of client-centered assessment for all supported employment programs, BPA and the advisory group felt much more work was needed to develop and refine measures that address the full range of important questions regarding job quality, integration, on-going support, and life quality. With regard to quality of life measures, it was felt that in order to capture the subjective nature of an individual's perception of the quality of his/her life, self-report measures would be needed that would protect the assessment from arbitrary values of non-participants being placed on the evaluation. BPA called for the development of measures that will address the subjective nature of quality of life and at the same time be considered valid by policy-makers and funding agencies. No nationally accepted quality of life measure has been developed for supported employment programs.

In California, the Supported Employment Systems Change Project has developed its own quality of life and quality of work life assessment in its client-based data collection instrument currently being pilot tested (Allen, 1989). It is a self-report questionnaire with items addressing both the nature of and satisfaction with the job, choice of employment, support on the job, transportation, living arrangements, after-work activities, pay and finances and unmet needs.

A more promising effort to utilize quality of life and client satisfaction measures on a national level is the "1990 Study" sponsored by the National Association of Developmental Disability Councils. This national study will determine the degree of effectiveness of the service

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system for developmentally disabled individuals. In the Amendments to the Developmental Disabilities Rights Act (P.L. 100-146, 1987) Congress instructed the states to describe and assess the effectiveness of the developmental disabilities service system in meeting the needs of the target population. The Act further required that one of the sources of information was to be a survey of a representative sample of the service consumers.

Three approaches are being used to gather information from consumers: individual survey interviews, key informant interviews, and public consumer forums. Each state Developmental Disabilities Council (DDC) will be interviewing 300 (Total N = 15,000) consumers (or their surrogate only if they are too young or unable to respond) in four age categories across all ages (Toms-Barker, 1988). The consumer survey instrument was developed by Temple University Developmental Disabilities Center/UAP, Research and Quality Assurance Group. It includes items on satisfaction with living, work, transportation, education, leisure time, and experiences with service agencies such as, case management, education, vocational, health, support, and transportation. If the respondent expresses dissatisfaction with any area, the reasons for dissatisfaction are itemized. In the area of independence in daily and community living skills the degree of choice and control the consumer has is of particular concern. The integration items assess how well the person participates in the community. For the productivity area, issues related to employment or other productive activity are assessed. And a "wish list" of needed services and supports is obtained. Information will also be obtained from key informants representing consumers and parents, as well as state and local funding agencies and service providers, regarding the extent and scope of systemwide services for individuals with developmental disabilities.

The third source of data will come from consumer forums which are required by law (P.L. 100-146). At these public meetings only individuals with developmental disabilities may speak. It is felt that while researchers have addressed problems of interviewing individuals with developmental disabilities such as acquiescence response bias and basic language and communication difficulties, we may not know what the primary consumer values or how they think about their lives. The consumer forums are conceived of as the forum in which to ask consumers to express their values and thoughts about the quality of their lives (Toms-Barker, 1989). Areas to be addressed by consumers include living situation, safety, friends, support, mobility, work, and leisure (see Appendix B). Attention to the consumer's level of satisfaction, autonomy and concerns for the future are also addressed in the meetings to be held around the state.

The 1990 Study will assess the developmental disabilities service system from a variety of perspectives, the providers and funder's, and most importantly, from the consumer's perspective, to evaluate the extent to which the services lead to independence, productivity, and integration for the individual (Toms-Barker, 1988). While the structured interview/survey approach resembles efforts at quality of life assessment from the research community, the Consumer Forums represent an approach which allows for greater latitude in topics and for more initiative from the consumer to discuss values and issues of importance in their own way.

Conclusion

The development of community-based services has been the result of our social policies of deinstitutionalization, normalization, and integration. The basic goal of community-based services for developmentally disabled individuals has been to bring living conditions, employment, social and community experiences and opportunities more in line with those afforded by nondisabled individuals in our society. As the life experiences of people with developmental disabilities more closely approximate those of nondisabled people, the standards and the methods for judging the quality of those experiences should also be the same for both populations. Such quality of life measurements provide information not only on the effectiveness of services for people with developmental disabilities but also reflect upon the success of our social policies. Measuring the effectiveness of social policies and services from the perspective of life quality outcomes is not a simplistic endeavor. Quality of life is a complex concept requiring sophisticated measures to assess it.

Only a few researchers in the field of developmental disabilities have attempted to define and assess quality of life. Still fewer have assessed quality of life from the subjective perspective. Most researchers have relied on objective measures and information from significant others. More recently, efforts have begun to involve the individual who is being assessed in the process by using self-report and satisfaction measures. This subjective approach parallels the theoretical constructs of quality of life and measurement approaches in research on nondisabled populations. Using the subjective approach is more in line with the emerging social policy that provides individuals with disabilities the same civil rights as the nondisabled population, in particular, the right to speak for themselves.

While the historical roots of quality of life assessment come from the development of objective indices of social and economic statistics, more recent work , particularly from the community psychology literature, considers the subjective perspective of the individual to be central to the assessment of quality of life. Researchers on quality of life in the developmental disabilities field also need to focus their efforts on the subjective approach. Studies have found that among nondisabled populations, the individual's perspective is affected by their self-esteem, feelings of control over their life, and their social relations and support networks. Measures of these factors are positively correlated with high quality of life and life satisfaction measures.

Research on the quality of life of developmentally disabled individuals indicates that quality of life is highest when the individual's life most closely approximates that available to the nondisabled population. From the individual's perspective, satisfaction is also highest under these conditions. Such conditions include competent and independent living, competent and independent use of community resources, competitive employment, individual choice- and decision-making, and social relations within a supportive network of family and friends. Clearly, quality of life for both disabled and nondisabled individuals is based on similar conditions, resources, and desires. If high quality of life stems from similar factors for both populations, it seems reasonable to conduct assessments in a similar manner.

Perhaps the greatest obstacle to valid assessments of quality of life with developmentally disabled individuals has been the problem of acquiescence response bias. The work of Sigelman has been significant in identifying valid response types (either/or, pictorial, concrete wording, and based on available information) and test designs that control for response bias. With valid instruments individuals with cognitive impairments can have the opportunity to speak for themselves in meaningful ways and have their opinions respected for their accuracy.

Congress has demonstrated an interest in the opinions of developmentally disabled individuals about their life quality and life satisfaction. They have mandated that information about and satisfaction with services they receive be provided directly by them. There has been some acknowledgement at federal, state, and local levels that quality of life information is an important program evaluation tool. While this paper has described the state-of-the-art efforts of individual researchers, state education agency follow-up programs, and federal program evaluations, more work in the 1990's on quality of life is needed. Such information will be valuable for the design and improvement of programs and services and, ultimately, for the evaluation of our social policies.

Greater efforts are needed to define life quality from the disabled individual's perspective and to refine measurement approaches and techniques. People with developmental disabilities need to be involved in the conceptualization of quality of life as well as the development of quality of life measures. This would provide people with developmental disabilities an opportunity to dialogue amongst themselves and with professionals about their values and to influence the course of this research. Only when we involve the subjects of our inquiry in the process of evaluating their life quality have we achieved some measure of success in our social policies.

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Introduction

Special education is a field that attempts to deliver quality educational services to students with disabilities. It is thus an "applied" field. It does not purport as psychology might, to delineate the personality dynamics of individuals with learning disabilities. Rather, it might, for example, design a teacher-parent instructional program to enhance persistence and self-sufficiency in the personality of the learning disabled child. In this light, "applied" should not be viewed as inferior to "pure" science. Indeed, successful interventions may create new portrayals of the personality or cognitive characteristics of the disabled individual. For example, the severely disabled adult who successfully works in a nonsheltered setting and befriends nondisabled coworkers will probably be characterized quite differently than the person who attends a sheltered workshop. Educational interventions that increase disabled individuals' skill attainment and proficiency in challenging environments will undoubtedly change how the pure sciences define a particular disability. Hence, applied efforts might both drive and underlie purer scientific advances.

Its importance as a catalyst notwithstanding, applied research will likely continue to be viewed as a stepchild to and something lesser than pure research. This problem is particularly acute in the field of special education. Its methods of inquiry have been adopted almost entirely from other disciplines, most notably psychology. The experimental designs, sampling procedures, and so forth, are drawn directly from social science research, which was primarily influenced by experimental psychology. More recently, there has been a heightened interest in ethnographic and anthropological approaches to studying disabled students. While these research methods have led to advances in the field, the question still remains whether a research model endemic to special education will emerge. It may be asking too much to expect an applied field to generate a new model for research. Yet if the quality and contributions of an applied science are to increase, one might hope for a unique research methodology to emerge.

This biennial series, in which this book is the first volume, seeks to contribute to that end. By reviewing research on contemporary topics in special education, the series will help to advance conceptual or theoretical models that will not only further the state of our research but also influence policy for the education of students with disabilities. This series should serve as a reference for educators and other professionals. It might also provide texts for a graduate course in special education research.

Despite special education's current dependence on other disciplines for its research methodology, there is one area where innovation characterizes the field. Historically, special education has advanced and implemented a number of models to provide instruction for students with disabilities: for example, mainstreaming models for learning disabled students or integration models for severely disabled students. Special education research has often been consumed with evaluating the efficacy of such models. The "program," in a sense, is the global independent variable. More refined research may attempt to identify the critical causal components of the intervention. At times, rather elegant methodologies unfold as the investigator pursues a career line of research, studying, for example, parent–child interactions of delinquent youth.

Thus, the state of the art for special education research in the near future may not be the emergence of a new research method. Rather, cumulative data bases may emerge that indicate the differential impact of educational interventions and models. One excellent way of organizing this information relies on a "quasi-judicial" focus. As it states, quasi-judicial inquiry applies a courtroom-based mode whereby the investigator (lawyer) offers many sources of evidence (multiple measure data) to make a case. Ultimately, the judge and jury (editor and peer reviewers) will decide guilt or innocence (was the intervention successful?). The appeal of the quasi-judicial method is that many research methods (quantitative and qualitative) may be compiled and synthesized to reach a particular conclusion. There is no one way, or single methodology, to attain truth. Thus, an article or book may include information from a group design as well as individual case studies.

Chapter 1 in this volume by Switzky and Heal directly addresses the issue of research methodology in special education. They first describe and comment on the set of research principles advanced by Campbell and Stanley (1966). Here is an example of a methodological advance that did emerge from educational researchers. Switzky and Heal then report a line of research that studied the personality characteristics of mentally retarded individuals. Switzky and Heal examine this line of research in terms of the Campbell and Stanley criteria and offer the reader a feel for the strengths and weaknesses of this enlightening line of work. Switzky and Heal present their work applying single case designs to a severely disabled population. Single case designs have emerged from behavioristic research (Baer, Wolf, & Risley, 1968). The designs establish internal validity as they sequentially modify a number of behaviors. Single case designs are particularly appealing in works with low-incidence populations, e.g., hearing impaired. The heterogeneity of these populations often precludes the use of group sampling. Individually graphed data may often lead to a better understanding of student characteristics and intervention efficacy. Single case designs are well suited to evaluate interventions in naturalistic settings; i.e., those contexts that may take much effort to obtain experimental control.

Perhaps part of the difficulty in advancing special education research is the dual roles that investigators must often play. That is, in its effort to upgrade services, all professionals (including researchers) in some capacity become advocates for some particular cause or program. Advocacy advances a value system. While advocating, investigators are primarily political and emotional. The search for truth and the notion of value-free science are secondary. While advocacy and research do not necessarily conflict, it is not uncommon for advocates to value research only when it supports their findings. For individual investigators, their tendencies to be advocates may guide their selection of hypothesis and data, as well as lead them to make tenuous conclusions that extrapolate well beyond the extant data.

The science–values controversy will never be fully resolved. All investigators impose some set of values or sentiments within their research efforts. The notion of a fully value-free social science is a myth. It is up to researchers to be aware of their own values and monitor and edit them accordingly. Just as there are controls for experimental confounds, there might be checks for values permeation into research. A most common intersection of values in special education research is found in studies evaluating a new or old program dealing with integration. Let us assume that the research was done at a time when most disabled students were placed in special classrooms and that it was found that a special class produces no better educational effects than a regular class. A conservative interpretation of the data could be that until there was evidence of superiority in the regular placement, students should remain in the special class. Such logic places an implicit value in the status quo, and does not consider the alternative; namely, that if there is no difference, why not place the student in the regular class? The latter position could be expanded by drawing on the value of least restrictive environment; that is, if there is no difference between programs, then the more integrated one would be favored. The main point to be made in this discussion is that all research questions contain some value. The researcher cannot deny these values, but must be aware of them and include them in designing and interpreting research.

Along those lines, each volume in this series will have chapters that address controversial topics in the special education field with an advocacy and value base. The authors attempt to clarify these values and issues and then cite and interpret related research. When possible, the authors point out whether a particular intervention has proven effective or not. In addition, they seek to advance conceptual or theoretical positions to synthesize a particular area of inquiry.

An example of an issue that has perplexed the special education field for many years is whether to place a student in a completely segregated or wholly integrated setting, or some mixture of the two. Since the passage of Public Law 94-142, the least restrictive environment mandate has led to the progressive inclusion of disabled students in regular education settings. Yet there is still much debate related to the extent of that inclusion. The Regular Education Initiative would place disabled students in regular classes for the complete school day. There would be no special education classes, and certainly no special schools. Such a radical integration plan cries out for convincing data to determine its effectiveness versus that of more traditional special education programs.

Historically, the most complete studies of social integration have appeared in early childhood programs. Richard Shores (1987), William Bricker, and their colleagues at George Peabody College monitored the rates of social interaction between disabled and nondisabled preschoolers. In this volume Chapter 2, by Filler and Olson, reviews the evaluation of early childhood programs. The data base from the multiplicity of these programs enables investigators to conduct statistical meta-analyses to evaluate treatment effectiveness across a number of studies. Chapter 2 reviews this research as well as other relevant topics like family dynamics.

Probably the greatest acceleration of service provision in the field has been for students with severe disabilities. P.L. 94-142 introduced the zero-rejection notion that all children, no matter how severe their disabilities, would be provided a free public education. In Chapter 3 Halvorsen and Sailor document this development and provide an encyclopedic catalogue of social integration tactics that work. Their review reflects the growing interest in the establishment of social support networks in the school and community.

Vocational special education represents another area of substantive growth toward integration. Historically, most disabled persons were not considered capable of being employed. In fact, the current high rate of unemployment of disabled adults reflects this belief, or self-fulfilling prophecy. During recent years, however, there has been a rapid growth in the vocational training of disabled youth. First with mildly handicapped students, and more recently with severely disabled students, there has been an adoption of community-based vocational training (work experience). Subsequent transition programs have planned for employment and independent living in adulthood. In Chapter 4 Siegel, Park, Gumpel, Ford, Tappe, and Gaylord-Ross review the many advances in vocational special education. It gives particular attention to the large number of follow-up studies which have monitored school-to-work transition and evaluated the efficacy of vocational training programs.

Language delay is an almost universal characteristic of disabled children. A wide variety of speech therapies have been used to remediate language delays. Reichle, Mizuko, Doss, Sigafoos, Benson, and Bykowsky in Chapter 5 provide an overview of speech disorders and their treatment. Their focus overlaps with the social skills–training approach of the integration literature in their emphasis on social communication and pragmatic intent. The authors also stress the functions of communication in their review of aberrant behavior and communication-based interventions.

Chapter 6, by Bullis, Freeburg, Bull, and Sendelbaugh, on hearing impairments reviews literature dealing with this specific disability. Besides presenting relevant information about the characteristics of hearing impairments the authors advance a bold model of deafness and cultural difference. The issues for the integration of deaf persons appear to be more complex than for other disability groups. Deaf persons have asserted their need to cluster within the support groups of other deaf persons. Thus, a balance must be struck between integrative and cloistering forces. The model of Bullis et al. elegantly reflects this balance.

Interestingly, assessment often dominated the early period of special education. There was much interest in diagnosing the student and identifying cognitive and motor deficits. But over time assessment has become, in some ways, a dinosaur that has outlived its purpose. Standardized tests often give few guidelines for the teacher to develop curriculum. A new approach, that of dynamic assessment is only now emerging. Dynamic assessment attempts to uncover the process the individual uses in thinking and performing. Originated and developed abroad by Vygotsky (1978), dynamic assessment has had particular appeal for school psychologists attempting to complete culture-fair assessments. In Chapter 7 Rothman and Semmel describe the foundations of dynamic assessment and show how it has been translated into experimental reading research by Brown, Campione, and their colleagues (e.g., Palincsar & Brown, 1984).

The chapters in this book address a wide span of topics in dealing with disability, educational models, and research methodology. In spite of its limitations, the special education field can be proud of its accomplishments in terms of cumulative data bases and productive interventions. Whether a new research paradigm will emerge from within special education will have to await the test of time. In the meantime, we argue that the quasi-judicial approach, which synthesizes a number of outcomes and methodologies, is the best way to evaluate and investigate emerging models of special education.

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MENTAL RETARDATION RESEARCH, ECOLOGICAL VALIDITY, AND THE DELIVERY OF LONGITUDINAL EDUCATION PROGRAMS[1]

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The paper discusses the schism that has developed between mental retardation research and the programmatic reform activities taking place in the educational and residential sectors. Principles for conducting more ecologically valid research are advanced to end this separation between fields and to improve the scientific status of mental retardation research. It is suggested that the researcher redefine his/her professional role to a more collaborative one with the staff of the research site. Finally, two examples are presented where ecologically valid research could be fruitfully generated.

There has been a growing discussion of the merits of past mental retardation research and the direction that future work should take (Brooks & Baumeister, 1977; Haywood, 1977; House, 1977). The field of mental retardation research appears to be entering a reflective phase in which an evaluation is being made of the rather well funded and intensive research efforts completed over the past 2 decades.

When taking stock of past accomplishments one must consider two primary dimensions: relevancy and scientific value. In many other scientific fields the dimension of relevancy would be secondary to the primary objective of accumulating an impressive body of scientific knowledge. In a field like mental retardation research, though, there is a clear interface with social and political issues, so that the outcomes of research projects must also be weighed against their effects and implications for providing services to handicapped persons. Researchers, defining themselves as pure scientists, would often reject this relevancy criterion outright. Others more sympathetic to applied matters would argue that there should be long-term benefits from pure research that cannot be specifically predicted at present. Given time, funding, and quality research activity, a powerful science and technology of mental retardation will develop that can be implemented by those of a more engineering bent.

A third emerging group of mental retardation researchers appears to be growing restless with such optimistic extrapolations and is beginning to exam-

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ine the value of investigations along different criteria than those used by orthodox scientific methodology. The recent plea by Brooks and Baumeister (1977) for ecological validity in mental retardation research draws attention to the relevancy and scientific criteria in different ways. First, it is asserted that conceptualizations of retarded persons emerging from laboratory work are less veridical than studies that could be done in natural, everyday settings. A concern is expressed by Brooks and Baumeister that a science of the artificial and trivial may have developed because most learning and cognitive tasks have little relationship to behaviors exhibited by retarded persons in natural settings. Second, although not addressed by Brooks and Baumeister, it would seem that research lacking in ecological validity would have few immediate implications for the delivery of services to retarded persons.

This paper examines issues related to the scientific value and relevancy of past mental retardation research and suggests future directions for work in this field. The position will be taken that mental retardation research is in the process of making a paradigm shift because of various limitations of extant models for research. Alternative models for conducting mental retardation research will be described, with the purpose of expanding the scientific validity and relevancy of the field.

REFORM AND RESEARCH

The reassessment of the accomplishments of mental retardation research did not originate from within the field. While investigators were working in their specialized fields a veritable legal and political revolution in mental retardation service was taking place. During the past 10 years litigation and legislation evolved to guarantee the rights of treatment, education, and least restrictive environment for handicapped persons. Mental retardation research could have had a greater influence on these major reforms and on the rethinking of how handicapped persons should be treated. In fact, however, the two fields of work, research and service delivery, developed relatively independent of each other. When mental retardation researchers did become aware of changes in service delivery it was usually through experiences ancillary to their research. A more direct indicator of social change for the researcher was, of course, when federal funding patterns shifted to more applied topics. Whether through direct or indirect influences, mental retardation researchers have gradually become more aware of applied issues and their relation to research.

Perhaps this reactive state of affairs could be expected from a field that is preparadigmatic. T. S. Kuhn (1970) described contemporary social sciences as being similar to medieval natural sciences in their lack of a universally proven and accepted paradigm for interpreting and acquiring knowledge. Preparadigmatic sciences have a number of competing theories and units of measure to interpret data. Their theories typically come and go without the emergence of a cumulative knowledge base. From this perspective, mental retardation research during the past 20 years has been dominated by the quasiparadigm of experimental psychology.[8] While experimental psychology has made a number of contributions to the field, its continued usefulness as the prevailing model for mental retardation research must be questioned. Alternative models for conducting research must be given greater attention. This paradigm crisis would not have developed so quickly had it not been for the parallel developments in mental retardation service delivery. The acceleration in the delivery of services has presented a challenge to assist in providing the important techniques and information needed to most effectively implement the mandated reforms.

In the future no retarded child will be excluded from an education, and the vast majority of children and adults, no matter how severe their handicapping condition, will be living in community-based residences. Mental retardation research will be called upon to produce more powerful instructional technologies and to demonstrate optimal living patterns. The types of projects to be supported by grant monies are likely to be those that investigate the acquisition of functional skills that can be used in natural settings. Experimental psychology could certainly contribute to such endeavors, but it will be necessary to complement this approach with alternative research models from, for example, the fields of education and anthropology. As the number and scope of research models expand it is increasingly likely that a more effective and cohesive mental retardation research paradigm will emerge.

LEARNING AND INSTRUCTION

It is ironic that the areas in mental retardation research given the most attention in the past, learning and cognition, which could have provided so many direct benefits for educational and training programs, did not in fact do so. Topics within the learning and cognition field that have undergone extensive investigation are memory (Baumeister & Kellas, 1971; Ellis, 1970), discrimination learning (Fisher & Zeaman, 1973), and problem solving (Spitz & Borys, 1977). Until recently (e.g., Taylor, Thurlow, & Turnure, 1977), experimental studies have been conducted almost exclusively in laboratory settings. There have been few attempts to directly relate experimental findings to issues concerned with classroom teaching. Therefore, teachers of the retarded have: (a) been left to their own devices in developing instructional materials or (b) turned to curriculum designers (e.g., Cawley, 1970; Goldstein, 1969) for guidance in acquiring materials and methods of value. To the detriment of the field, there has been little integration of experimental methodologies with curriculum-development projects. Such an integration would be of value to the curriculum designer because it would introduce more methodologically sound procedures into the curriculum-validation process. For the researcher, it would permit the study of developing cognitive structures and processes in a longitudinal manner within a natural setting.

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[8] The predominance of a particular discipline like psychology over mental retardation research can be inferred on a judgmental or statistical basis. While it is acknowledged that there have been substantive contributions from the disciplines of education (MacMillan, Jones, & Alioa, 1974), medicine (Engel, 1977; Sells & Bennett, 1977), and sociology (Tarjan, Eyman, & Meyers, 1973), in my judgment psychology has been the prevailing discipline in mental retardation research. Actuarial support for this judgment was obtained by tabulating the number of psychological and nonpsychological articles (e.g., medicine, sociological, vocational) appearing in the *American Journal of Mental Deficiency*, Volumes 77–80. The frequency of psychological and nonpsychological articles was 245 and 99, respectively, a statistically significant difference.

PRINCIPLES OF ECOLOGICALLY VALID MENTAL RETARDATION RESEARCH

It is often easy to criticize and second-guess historical developments in a particular field. The contribution of this paper would be limited if it went no further than to make the historical point that unproductive schisms have existed between mental retardation research and mental retardation service delivery. A set of guidelines will therefore be proposed to assist mental retardation research in its search for a more effective paradigm.

The most limiting aspect of much mental retardation research is its *episodic* nature. That is, the data base of most studies is typically represented by a very short span of the subject's life. There may be only one or a few observation sessions that occur within a single day or week. Sessions may last only a few minutes. Such studies thus suffer from the external (ecological) validity question of how well they represent the cognitive and social behavior of retarded persons in natural settings. This is necessarily true, since the molecular slices of behavior gained from episodic studies are elicited under controlled experimental (and thus artificial) conditions in order to insure reliability of measurement and to exclude extraneous variance.

Besides the question of ecological validity, episodic experimental research raises theoretical questions about the construct validity of studies characterizing developing cognitive processes. One of the central themes of Wohlwill's (1973) methodological treatise on behavioral development is that the field of developmental psychology is inundated with too many cross-sectional, or episodic, studies that misrepresent the true nature of developing cognitive structures. That is, a couple of samples of behavior do not capture the equilibrating aspects of emerging cognitive structures, with all of their intricate decalages or transitional states. Only through longitudinal, repeated measurement across relatively long periods of time (months and years) can more veridical assessments and process inferences be made.

There are, of course, professional and economic factors that tend to reinforce episodic research. For example, professional advancement is often determined by the production of multiple publications in a short period of time. Also, the costs of supporting longitudinal projects are often prohibitive. In spite of these logistical problems, a science built primarily on a series of episodic studies has limited merit because process inferences are drawn from observations in artificial situations with little developmental background.

Episodic research also tends to promote investigations of *single responses*. Whether it be paired-associates, nonsense syllables, or an operant social response, a single unit of behavior is recorded in an experimental session. The thrust of this approach is to unravel the critical components of the response or the parameter values of independent variables affecting response output. In some way, the stimulus–response (S-R) paradigm is applied to dissect the specific relationships of the variables under study. In contrast, a suggested focus of study would be to observe chains of S-R units. Gagné (1965) has outlined a hierarchy of learning types with chains being at a higher level than single S-R units. In the past a disproportionate amount of research has focused on the S-R unit and avoided the study of the acquisition and maintenance of behavioral chains.

It should be pointed out that the study of, and training for, the longitudinal development of behavioral chains is the stuff or substance of education and teaching. Looking at one step or one response in a shoe-tying or shirt-removing sequence would be quite inconsequential to the practicing teacher. Rather, the technique of task analsyis in education entails the listing of the sequential steps (S-R units) to master a particular skill. The techniques of forward and backward chaining are used, respectively, in beginning instruction at the first or last step in the behavioral chain. While commonly used by practitioners, the scientific efficacy of either procedure has never been definitively studied. It would appear that topics derived from an educational model would be useful in suggesting the focus of future research efforts.

Another limiting effect stemming from episodic research is that there tends to be a focus on a single isolated response rather than an examination of the simultaneous interaction of a number of stimuli and responses, although the study of covariate behaviors has not been as seriously overlooked as the study of response chains. Operant investigators in particular (e.g., Wahler, 1976) have often monitored covarying behaviors in multiple baseline designs. Still, it is felt that serious consideration has yet to be given to the broader context variables that surround the target behavior. As House (1977) has pointed out, the study of context has been repeatedly called for, but typically it proves to be an elusive notion with little definitive meaning. To help clarify matters, I am suggesting that behavioral context might be studied in a number of ways, one of which would be to document the interactions of clusters of covarying responses and cues. From a personality-theory perspective, Mischel (1973) has pointed to the importance of person-by-situation interactions, and Baumeister and Muma (1976) have extended this notion to help define mental retardation.

In terms of more far-reaching alternative paradigms, though, the work of antropologists might be instructive. Anthropologists, or, more specifically, microethnographers, have developed qualitative and quantitative techniques that examine communication flow within a specific cultural context (Erickson, 1975; Kendon, Harris, & Key, 1970; Scheflen, 1973). Inferences about the nature of communication, cognitive products, and social behaviors are not made before an extensive study of the meaning of contextual cues and subcultural assumptions is completed. For example, rather than collecting classroom observation data from preset coding categories (e.g., Flanders, 1970), a longer term participant–observer analysis would be made of the symbolic meaning of nonverbal and verbal cues in the classroom before quantifiable behavioral categories might emerge. Ethnographic analysis is more holistic and longitudinal than are episodic psychological studies, and it has already demonstrated its value in the retardation research field with Edgerton's ongoing study of community living (Edgerton, 1967; Edgerton & Bercovici, 1976). It would seem that anthropological approaches could be invaluable if and when mental retardation research moves to more natural settings.

The work of Cole, Gay, Glick, and Sharp (1971) offers an example of how anthropological and experimental approaches can be effectively integrated. The authors were interested in studying cognitive processes from a crosscultural perspective. They did not merely administer a number of memory, discrimination, and problem-solving tasks to the Kpelle (African) tribesmen in an episodic manner and make immediate contrasts with a matched Western sample. Rather, they initially spent a great deal of time conducting an ethnographic analysis of the indigenous ways that the Kpelle perceived and cognized their world. After this ethnographic analysis they began to modify the experimental cognitive tasks in a way that would reflect both the strengths and weaknesses of Kpelle mental abilities. Since the deficit versus difference issue is critical in crosscultural psychology as well as in mental retardation research, the latter field would surely benefit from incorporating anthropological approaches in its assessment of cognitive processes. Furthermore, it is imperative that the field give greater attention to context or system variables through ethnographic and covariate analysis techniques.

A final implication emanating from a longitudinal approach to research is that more long-term *training* studies should be carried out. Interventions in cognitive studies typically consist of one or a few training sessions. D. Kuhn (1974) has questioned the value of short-term interventions in Piagetian research, since trivial structural changes are likely to occur. She later demonstrated (Kuhn & Angelev, 1976) that the density, or number of treatment sessions over time, has a significant effect on the amount of change in cognitive schemes. If powerful cognitive interventions are to be developed, they will undoubtedly have to be longitudinal in scope. The recent work of Brown (Brown, Campione, & Murphy, 1974) points out the importance of obtaining durable and long-term improvements in memory strategy usage. From a different line of work, Budoff and Gottlieb (1976) have shown that substantial changes in attitudes toward the retarded as a function of mainstreaming will be manifest only after longer (1-year) periods of integration.

The recommendations for long-term training studies is totally consistent with educational models of instruction. Notwithstanding one-trial theories of learning, educators would nearly always depict the acquisition of important academic skills as a development occurring over relatively long periods of time. Long- and short-term plans for skill learning may range between a couple of weeks or years in setting terminal-objective timetables. The prevailing modes of evaluation would suggest continued, daily monitoring of pupil progress (formative assessment) as well as intermittent probes every few weeks (summative assessment) to tap cumulative learning. Formative and summative measurement

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are necessary techniques in the implementation of comprehensive, longitudinal research.

THE COSTS AND LOGISTICS OF ECOLOGICALLY VALID RESEARCH

If the principles of ecologically valid research were followed, the resulting studies would be of a massive and ambitious scope. Investigations that longitudinally monitored the acquisition of skill sequences and their covariate S-R chains within a systemic and intervention context would certainly be comprehensive. Two problems would emanate from such large-scale studies that would have to be resolved. First, it would be necessary to design studies in a way that isolated the causal components of the longitudinal treatment package. Large-scale applied studies in the past have often presented global interventions where it was impossible to disentangle the causal from the trivial components of the treatment variance. Fortunately, there exists designs and statistics, e.g., multiple-baseline and time-series analyses, that permit an accurate analysis of repeated-measure treatment effects.

A second problem is the potentially prohibitive costs of the suggested projects, especially in view of the current dwindling of support for research activity. The way to circumvent this problem entails a complete redefinition by the researcher of his/her role as a professional, a redefinition fundamentally concerning the manner in which he/she relates to the school or agency where subjects are obtained. It has traditionally been imperative for the investigator to "get" subjects and often "pull" them from a particular classroom or vocational setting. The vernacular of getting and pulling subjects has the implication that the research process is something separate and independent from the matter of educating and training students. It is proposed that mental retardation researchers take a more active stance in relating their activities to the concerns of ongoing instruction. The investigator can give needed technical assistance to the particular sites where subjects were obtained.

A collaboration between researcher and school (or workshop or residence) would reap reciprocal benefits for both parties. The researcher could help teachers refine their techniques, for example, in the areas of evaluation and instructional design. The collection by teachers of ongoing samples of the acquisition of skill sequences would offer the researcher a data base indicating learning and cognitive processes in natural settings as well as suggesting topics for more intensive investigation. Then, more scientifically controlled data probes could be made in both natural and laboratory settings. The point of departure from traditional episodic studies is that the proposed data probes would be generated from hypotheses emanating from ongoing learning activities in the classroom. Furthermore, teacher-collected data could be crossvalidated against the more scientifically controlled probes. Through these collaborative activities there would be a greater assurance that research would meet the relevancy criterion of ecological validity while building in controls for observational rigor.

Another benefit should accrue to the researcher who is in close collaboration with schools and other sites. In recent years it has been increasingly difficult for researchers to obtain subjects to participate in studies. Part of the difficulty developed because of the excesses of a few researchers who unwontedly endangered the physical or psychological health of the study participants (Barber, Lally, Makarushka, & Sullivan, 1973; Cotter, 1967). A second reason is that there has been an increasing societal awareness of the rights of the individual in all contexts, including research settings. Therefore, the written permission of a parent or guardian is required before experimental sessions begin.

A third and somewhat overlooked reason for the difficulty in obtaining subjects stems from the fact that the administrator and staff of a particular site often perceive little meaning or utility in the purpose and procedures of the research. In this sense, research has little credibility in the eyes of the administrator; in fact, the administrator may feel that he/she is doing the researcher a "favor" by giving entrée to the subject population. Whatever the social psychology of favors might be, when favors are not given, the researcher is cut off from needed populations. In contrast, if a collaborative relationship between school and researcher were established, the researcher would have clear credibility. In other words, the issue of favors or administrative whim for obtaining subjects would not arise, since the activities of the researcher would already be established as being in the best educational interests of the school.

SOME SUGGESTED TOPICS FOR ECOLOGICALLY VALID RESEARCH

In addition to laying down guidelines for ecologically valid research, it should be helpful to outline a couple of specific topics that are both in need of investigation and amenable to longitudinal approaches. One topic deals with the reduction of aberrant behavior, e.g., self-injury and sterotypy, particularly among the severely handicapped. On one hand, a number of operant procedures have demonstrated their effectiveness in reducing aberrant behavior through contingently consequating responses (Bachman, 1972; Baumeister & Forehand, 1973). This success must be qualified, since response suppression is often limited to the immediate treatment setting, with minimal maintenance of treatment effectiveness when the study is completed.

While the use of intermittent schedules may overcome the problem of situational and temporal generalization (cf. Koegel & Rincover, 1977), an alternative to operant methodology might prove more successful in eliminating aberrant behavior. An educational-curricular approach would generally avoid consequating deviant behavior in any systematic way. Rather, a comprehensive educational plan would be devised to increase the number of skills in the child's repertoire. On the assumption that aberrant behavior appears when constructive behaviors are absent or poorly developed, the educational approach would intervene with curricular instruction that would build skill sequences to replace aberrant behaviors. Thus, aberrant behavior would be indirectly (rather than directly) treated with the educational-curricular program (Goldstein, Note 1). The educational and operant positions are competing, though not mutually exclusive, interpretations of the treatment of aberrant behavior. Which ap-

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proach is more effective is an open empirical question. A longitudinal design that examines the development of covarying behaviors (aberrant and constructive) as a function of operant-consequences and/or skill-sequence instruction would be of interest to both pure and applied researchers.

Social-skill training has been largely ignored by mental retardation researchers in spite of its importance for successful adjustment. Often the success or failure of a vocational placement is more critically determined by the proper application of interpersonal skills rather than intellectual skills. The retarded employee usually masters the vocational tasks required to perform the job satisfactorily. In other words, when failure on the job placement occurs, it is likely to be due to failure in social-skill performance. While it is evident that research, particularly intervention studies, is needed in this field, it might be useful to apply established principles of learning to such projects (e.g., Hersen & Eisler, 1976). Rather than separating social from cognitive learning, social-skill training could be interpreted in terms of discrimination learning (Medetsky, Note 2) or logical inference (e.g., Guilford's, 1967, behavioral intelligence). Interpreting social-skill development and training within a cognitive-learning perspective would provide a multimethod validation (Campbell & Fiske, 1959) of the latter concepts. That is, particular types of learning, such as problem solving, would be monitored with social content, e.g., learning to avoid dangerous abduction attempts (Hocutt, Gaylord-Ross, & Ford, Note 3). The parameters determining the acquisition of social behaviors and classical cognitive tasks could be contrasted within and among subjects. Such crosstask contrasts would better define underlying learning mechanisms through multimethod validation while simultaneously meeting the criteria for ecologically valid research. The need to make crosstask contrasts seems particularly important due to the accumulated work showing fundamental learning mechanisms to be response- or context-specific (Herrnstein, 1977).

The study of social-skill acquisition could also have an effect on how retarded persons have been conceptualized by researchers. The use of MA and IQ, while admonished, has still shown its value in explaining the variance on a number of traditional cognitive tasks (House, 1977). In the social domain, though, the stranglehold of MA in explaining performance may be weakened. For example, Hamre-Nietupski and Ford (Note 4) have reported that a curricular program in sex education and related social behaviors for retarded adolescents was equally appropriate for nonretarded adolescents. For skills like social–sexual behavior, where there is equal unfamiliarity and the same cultural taboos for both retarded and nonretarded persons, there may be similar acquisition and performance rates in learning. Thus, the Spitz and Borys (1977) reference to the CA contrast as trivial and the MA match as critical between these groups might only hold up for traditional cognitive tasks. For social behaviors the effects of similar (and different) historical experience may make CA contrasts quite meaningful. Also, the breaking away from MA-match conceptualizations has critical implications for instruction. Because retarded persons have been intellectually compared to their MA equivalent, instructional material geared for preschoolers has often been used for retarded children and adolescents. On the intellectual dimension the MA-matched materials may be fine, but at the same time the preschool materials may be limiting social and personality development because of their chronological and experiential inappropriateness. In conclusion, the interaction of MA and CA levels of cognitive-social development with instructional programs certainly appears to warrant further study.

A final point should be made about a large body of work within mental retardation research and its relationship to the principles of ecologically valid research. Behavior modification has played a large part in the recent history of mental retardation research and in many ways has adhered to the principles of ecological validity. It should be instructive to detail how behavior-modification research meets or falls short of these principles. Since behavioral approaches use repeated-measure designs and are explicitly interventionist, they would satisfy the criteria of being longitudinal and training oriented. In addition, they typically occur in natural settings like classrooms or homes and therefore would not be limited to laboratory findings. The monitoring of multiple responses in multiple-baseline designs would certainly permit the analysis of response covariance.

Operant research falls short of being ecologically valid on two counts. First, the level of analysis is almost exclusively the single response (and its antecedent stimuli and consequences). The acquisition of response chains, as in the cognitive literature, has been generally overlooked (an exception would be Horner & Keilitz, 1975). In reversal or multiple-baseline designs, one or many unit responses are tabulated over time with a frequency or interval count of occurrence. Second, because the acquisition of response chains has not been studied, the articulation of operant programs in relation to the overall educational programming of the person has been wanting. Behavior modification has typically remained at a molecular level of analysis and has failed to coordinate its often impressive results with the overall educational planning of skill-sequence development. This problem becomes especially acute when a laboratory demonstration of response acquisition occurs with little concurrent effort to coordinate the accomplishment with teaching and other direct-care staff. Such a development could be avoided if the researcher redefined his/her role in relation to site staff in a collaborative way.

CONCLUSION

This paper has tried to end the division between research and programmatic interests in the mental retardation field by advancing principles of ecological validity. Examples of ecologically valid research have been suggested. It has been recommended that the mental retardation researcher develop a more collaborative role with site staff in order to improve the relevancy and scientific value of his/her work. It should be interesting to return in a decade and review the direction that the field of mental retardation research has taken.

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Ecological Validity Revisited:
A 10 Year Comparison of Two Journals

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Abstract

The effect of pleas for ecologically valid research in the 1970s were examined. The research in two periodicals, the American Journal of Mental Retardation (AJMR), and the Journal of The Association for Persons with Severe Disabilities (JASH) was assessed on ecological validity criteria. A 2 x 2 design found that the periodicals had relatively low and similar ecological validity scores at 1976-78. At 1986-88, though, JASH increased substantially while AJMR remained at about the same level. The category changes in JASH were significant on four of five categories. The results were interpreted with respect to the nature of the advocacy and scientific values espoused by the mother organizations of each of the periodicals.

Ecological Validity Revisited:
A 10 Year Comparison of Two Journals

A number of professionals have raised concerns regarding research practices focused on persons with severe disabilities (Brookes & Baumeister, 1977; Gaylord-Ross, 1979; House, 1977). Although House lauds the contributions of basic research to the field of intellectual disability, Brookes and Baumeister (1977) and Gaylord-Ross (1979) have argued for a different type of research methodology - a research directed toward more meaningful and socially relevant outcomes. In their plea for ecological validity, Brookes and Baumeister note that laboratory research has not increased our understanding of the behavior of persons with cognitive disabilities. They assert that the selection of participants for a study should be based on adaptive behavior rather than IQ scores, that experimental manipulations should take place in natural settings rather than laboratory contexts, and that dependent and independent variables should be selected on the basis of relevancy for functioning in natural environments rather than for functioning in artifically-controlled situations. Gaylord-Ross (1979) expanded upon this theme by stating that research embodying ecological validity should be longitudinal in nature and also have direct implications for the delivery of services to individuals with severe disabilities.

The present study empirically examined how two major periodicals have embraced the ecological validity notion in their publications since the pleas for this methodology. Thus, a sample of research studies was evaluated on the ecological validity criteria.

Method

Criteria for Selection of Studies

All of the articles in *The American Journal of Mental Retardation* (AJMR) and the *Journal of The Association for Person with Severe Handicaps* (JASH) at the beginning and end of a decade, were sampled. Thus, all of the articles between 1976 and 1978 and between 1986 and 1988 in each periodical were reviewed. Studies were selected for further examination if the focus of the study was to train new behaviors or to reduce inappropriate behaviors; and the participants of the study were described as moderately, severely, or profoundly disabled, or autistic (where IQ was given: IQ < 50).

Of those articles that met the above conditions, 10 were randomly selected from each journal at each time period (i.e., 1976-1978 & 1986-1988) for a total of 40 articles.

Index of Ecological Validity

A study was considered to be ecologically valid within each of the following categories:

1. *Functional Target Behaviors*: The target *behavior*(s) was chronologically age-appropriate and relevant for functioning in present and/or future natural environments, and the *materials* used for training were chronologically age-appropriate and relevant for functioning in present and/or future natural environments. Both of these conditions had to be present for a study to receive a 'positive' score for this category.
2. *Natural Setting (Intervention)*: The intervention was delivered in actual situations and/or environments where the behaviors and skill(s) would be expected to be performed by similar-aged nondisabled peers.

3. Natural Setting (Measurement): The measurement of the dependent variable(s) was conducted in actual situations and environments where the behaviors and skill(s) would be expected to be performed.
4. Generalization: The measurement of generalization was conducted across at least one dimension (i.e., settings, materials, persons, stimuli, etc.).
5. Maintenance: A follow-up or maintenance measurement of the target behavior(s) was obtained.

Each study could attain a score from zero through five, depending on the number of categories which received positive responses. This ecological validity index was then tabulated across the 10 study sample within each time and journal block. In addition, each journal by time block could have a score from 0 through 10 for each of the ecological validity categories. Thus, specific categories of ecological validity as well as an overall ecological validity index underwent numerical analysis.

Reliability

Interrater reliability data were taken on 30% (or 12) of the 40 articles randomly selected from the sampled articles. Two raters (a special educational administrator and a professor of special education, the first and second authors, respectively) independently scored each of the individual categories. Interrater agreement was determined by dividing the number of agreements by the number of agreements plus disagreements and multiplying the quotient by 100. The median agreement ratings for the categories were as follows: functional target behaviors, 83%; natural settings for intervention, 83%; natural settings for measurement, 83%; generalization, 92%; and maintenance, 100%. The median across all responses in the five categories was 88%. The first author served as the criterion rater for all the the studies in the investigation.

Statistical Analysis

Data were analyzed using the test of two uncorrelated proportions (Fleiss, 1973). Ten separate tests were conducted (five for each journal) to determine whether significant differences existed between the two time periods for each of the journals on the five categories used to evaluate ecological validity. Four additional tests were conducted to determine whether or not there were significant differences on the total ecological validity index score between the two journals and across the two time periods.

Results

Table 1 displays the number of articles attaining ecological validity for each of the categories at each of the journal time blocks. In terms of total number of positive category scores, it is evident that AJMR and JASH were about equal in the 1970 block. A decade later, though, JASH had many more positive scores. Let us examine these changes in more detail.

Insert Table 1 about here

The results of the 10 tests conducted between the two time periods for each journal are displayed in Table 1. Significant differences were present in four of the five categories for the studies selected from JASH; all but the generalization category increased over time.

The total ecological validity index scores were examined in two separate contrasts. First, the difference across decade samples for AJMR was nonsignificant ($z = 1.34$). The larger, later score for JASH was significantly greater than its earlier score ($z = 6.0$, $p < .01$). Second, the difference in ecological validity index scores between AJMR and JASH at the earlier point was nonsignificant (_z_ = .2). At the later point, though, JASH had a significantly larger score than AJMR (_z_ = 5.1, _p_ < .01).

Discussion

A field of research needs to balance its concern for internal validity and external validity (Campbell & Stanley, 1977). Certainly there is a place for highly controlled research in laboratory settings, where exquisite internal validity can be established. Yet, a field dominated by the laboratory, particularly when studying persons with disabilities, may take on an understated, deficit driven character. Pleas for ecological and external validity have argued that the richness and full potential of disabled persons may only be portrayed in a variety of natural environments (Gaylord-Ross & Peck, 1984).

The present study examined whether the appeals of researchers and advocates for ecologically valid research had permeated two prominent journals. The findings were rather clearcut. In the late 1970's both AJMR and JASH displayed rather low ecological validity scores. Their scores were equivalently low across categories of ecological validity (except for a moderate score by JASH on generalization). A decade later, though, the periodicals differed quite markedly on this criterion. AJMR did not significantly change on any category or the total index. In contrast, JASH increased significantly on four of the five categories and on the total index. The one category that did not change significantly, generalization, still had a high post score (8). The lack of significant change was likely due to the high pre-score (6).

One can speculate as to the reasons for the different trends in the respective periodicals. Historically, The Association for Persons with

Severe Handicaps (TASH) has prided itself on being an advocacy organization. It has had an active research component, particularly through its periodical, JASH. Yet, one might suspect that its advocacy infrastructure directly or indirectly influenced JASH to incorporate more functional, ecological research in its publication policy. Perhaps retrospective interviews with previous JASH editors might shed further light on this matter.

Historically, The American Association for Mental Retardation (AAMR) has had close ties with large institutions. AAMR has certainly broadened its focus in the past few decades to included community-based organizations and members. Of late, it has taken stands on contemporary issues which could not be considered conservative (e.g., nonaversive behavior management). Yet, AAMR researchers in the past often took a stand that data must first substantiate that more integrated programs are superior before policy positions are taken to move disabled persons to less restrictive environments. Such a position was taken under the guise that social science is value free and only 'the data' can speak to the need for shifts in policy (cf. Gaylord-Ross & Peck, 1981).

In contrast, TASH-related researchers have typically presumed that the integrated setting is inherently superior. Their research has then proceeded to demonstrate the salutary effects of integrated living. Thus, their research is an endeavor to confirm or fine-tune the desirable effects of integration. In contrast, AAMR-driven research does not make such a presumption. It views integrated versus separate living as an empirical question to be tested. Also, it may view setting variables as secondary to the purer research endeavor of uncovering fundamental processes through internal valid designs. Thus, experimental settings lacking in ecological validity may be more appealing because of their controllable nature, and the pure research belief that laboratory findings of fundamental human processes can, more or less, be veridically extrapolated to more natural, everyday circumstances.

Certainly these interpretations are in need of further investigation. Researcher publishing in each of these journals have been singularly characterized here, perhaps in an unfair and narrow fashion. Future investigations might interview these researchers to more directly examine their views on scientific method, values, and the understanding of persons with disabilities. Efforts which better articulate the findings and roles of pure and applied research should enhance our knowledge and ability to improve the lives of persons with disabilities.

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Table 1

Ecological Validity Index and Category Scores for the Two Journals.

	AMJR			JASH		
	1976-78	1986-88	z	1976-78	1986-88	z
Functional Target Behaviors	3	4	.47	1	9	3.58**
Natural Settings: Interventions	2	2	.00	2	7	2.24*
Natural Settings: Measurement	2	2	.00	2	8	2.68**
Generalization	3	4	.47	6	8	.98
Maintenance	1	5	1.95	1	8	3.15**
Ecological Validity Index	11	17		12	40	

* $p < .05$

** $p < .01$

Preface to Book:

Visual Inspection and Statistical Analysis of Single Case Data

Patricia Busk, Leonard Marascuilo, Hyun-Sook Park, and
Robert Gaylord-Ross

Preface

Statistical Analysis of Single Case Data

This compact book attempts to describe a number of straightforward statistical techniques to analyze single case data. During recent years the single case, or interrupted time series design from the field of applied behavior analysis have been shown to be internally valid and have become accepted by an increasingly wider audience. At the same time, the data base generated from behavior analytic research has frequently been confirmed by larger sample studies, thus further establishing the substance and external validity of this field.

Yet, some sympathetic and other critical investigators have begun to question the soundness of the main inferential technique of behavior analytic research. That is, in analyzing the single case the investigator must scan a plot of data. In the simplest case a comparison is made between a series of points in one condition (typically baseline) and a series of points in a second (training) condition. An inference is subsequently made from this visual inspection that the two conditions differ or do not differ from each other.

Recent investigators have called this method of visual inspection into question. Furthermore, a number of statistically based techniques have been advanced to analyze such single case data. A number of empirical investigations have found the visual and statistical procedures to sometimes agrees, and at other times to differ. Interestingly, the visual method was sometimes more conservative but in other cases the statistical method concluded no difference between conditions when visual analysis inferred significance. Such discordance between inferential techniques led some researchers to suggest that a statistical analysis be conducted instead of or in combination with visual inspection.

A number of statistical methods have been advanced for this endeavor. Some have been rejected because of statistically inappropriate (analysis of variance) or because of their inordinate data size requirement (times series analysis) not commonly found in behavior analytic studies. Fortunately, Edgington (1978) advanced a "randomization" test to analyze single case data. This nonparametric test places few requirements on the investigator with respect to data base size or statistical assumptions.

The nonrandomization test concept was further elaborated by Marascuilo and Busk (1987). In fact, the current volume builds from that work. Randomization tests for almost any kind of single case design is now possible. Here, we attempt to explain the basic statistical formulation for each test. Then, the basic steps to calculate a set of data are displayed. Next, an illustration is provided, often from real data sets collected in natural settings. The tests for different types of multiple baseline and other single case designs should enable the researcher to make valid inferences from their varying data bases.

We have attempted to describe the tests and explain their statistical underpinnings in a straightforward manner. Randomization tests, we feel, are rather simple in their design and calculation, thus lending themselves toward such lucid exposition. We have organized the book into a series of how-to chapters which explain the design and the statistical test. The reader having had a basic course statistics should have no problem with the subject matter. Rudimentary concepts like central tendency and rectilinear graphic display are all that is required. Thus, the book could serve as a reference in an undergraduate or graduate course in statistics of research design. The advanced statistician and single case design researcher should be able to master the techniques in a facile manner. If necessary, simple programs could be written to make the statistical calculations. Typical single case data based, though, can be numerically managed with a hand calculator.

In addition to the expository chapters, we have included a chapter which reviews the research comparing visual and statistical methods. We give particular attention to our own work (Park, Marascuilo, & Gaylord-Ross, 1990) and argues for the joint agreement between the two approaches before significance between conditions may by cancelled. Finally, we included an extensive lest of references which address the relevant single case design and statistical literature.

Statistical Analysis and Single Case Design attempts to explain a number of randomization tests which are appropriate for interrupted time series data. In addition to educating interested researchers, we hope to advance the field by reviewing extant research and stimulating further investigation. The relationship between visual and statistical inference is far from completely understood. Only future inquiries by our community of scholars will advance our knowledge base in this direction. Hopefully this volume will make a substantive step in this direction.

Visual Inspection and Statistical Analysis in Single Case Designs*

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Running head: VISUAL AND STATISTICAL ANALYSIS

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Abstract

Past research has questioned the reliability of visual inspection in single case research. It has also reported or called for the use of statistical analysis in single case research. The present study randomly selected 44 graphs from recent issues (1975-1985) of the _Journal of Applied Behavior Analysis._ The study found moderate agreement (56-74%) of visual significance among a panel of five judges. The judges also detected a rather low proportion (48%) of significant differences between the adjacent phases of published graphs. A randomization test was applied to a subset (_n_=15) of the graphs and found statistical significance between only four of the adjacent phases. Considerable agreement (80%) was found between the visual inspection and statistical procedures, although most of it involved agreement of the nonsignificance of treatment effects. It was recommended that future single case research jointly utilize visual and statistical procedures when determining significance. It was also suggested that future research in the field examine graphs with multiple phases, baselines, and participants.

Visual inspection (Sidman, 1969) has been the predominant mode of analysis for evaluating treatment effects in single case designs (Haring, 1982; Kazdin, 1976; Kratochwill & Brody, 1976, 1978; Park, 1986). This has been true even though the reliability of visual inspection has been repeatedly questioned. Agreement among and within judges using visual inspection has been consistently found to be low (e.g., DeProspero & Cohen, 1979; Jones, Weinrott, & Vaught, 1978; Knapp, 1983; Wampold & Furlong, 1981). Because of its doubtful reliability, statistical analyses were proposed as a supplement to, or replacement of, visual inspection in evaluating the reliability of behavior change in single case data (DeProspero & Cohen, 1979; Jones et al., 1978; Kazdin, 1976, 1982).

However, far from adopting statistical analysis as a legitimate method, controversy over its use among behavior analytic researchers has continued. Its proponents argue that statistical analysis produces consistent conclusions among users and across time. Its opponents argue that visual inspection has the advantage of providing a conservative test, and that statistically significant, but unimportant small changes are not recognized (Baer, 1977; Michael, 1974; Parsonson & Baer, 1978;). That is, the scientific demonstration of small effects detectable by a statistical test is not of interest to behavior analytic researchers (Baer, 1977).

Another argument brought against the use of statistical analyses concerns the inappropriateness of particular tests applied to single subject data. When variations of ANOVA were proposed by Gentile, Roden, and Klein (1972), and Shine and Bower (1971), the models were roundly rejected (Hartmann, 1974; Kratochwill, Alden, Demuth, Dawson, Panicucci, Arntson, McMurray, Hempstrad, & Levin, 1974; Thoresen & Elashoff, 1974). Objections centered around the inappropriateness of ANOVA in handling data with serial dependency.

As an alternative to the ANOVA model, time series analysis was suggested (Glass, Willson, and Gottman, 1975; Hartman, Gottman, Jones, Gardner, Kazdin, and Vaught, 1980; Jones, Vaught, and Reid, 1975; Jones, Vaught, and Weinrott, 1977). Though the test handles the serial dependency legitimately, it is limited in practical use because it requires at least 50 to 60 data points within a phase. Most experiments in single case research contain few observations per phase. In fact, Huitema (1985) found four observations per phase to be modal.

Randomization tests have been suggested as an appropriate statistical model to analyze single case data. They were originally suggested by Edgington (1969, 1975, 1980a, 1980b, 1980c) for AB designs, and expanded by Levin, Marascuilo, and Hubert (1978)for ABAB designs. Marascuilo and Busk (1985) have further expanded their use for AB or ABAB designs with multiple subjects. Randomization tests are appropriate for data with serial depedencies. In an AB comparison, they require a random assignment of data (block of data or treatment) with at least 25 data points across phases, and at least 5 data points within a phase.

The present study examines the agreement among judges when visually inspecting published AB graphs. Almost all previous investigators (i.e., DeProspero & Cohen, 1979; Knapp, 1983; Wampold & Furlong, 1981) have used hypothetical graphs and have reported inconsistencies among and within judges. The present study (like Jones et al., 1978) examines the reliability of visual inspection with previously published graphs. It is hypothesized that there would be more agreement among judges reviewing published graphs because these graphs represent significant treatment effects. We then conducted the first (to our knowledge) normative evaluation of published graphic data using the randomization test. We then examined the agreement of visual and statistical procedures, expecting the former procedure to be a more conservative indicator of treatment significance.

Method

Participants

A group of five professionals served as judges in rating the graphs. They all had received formal training in applied behavior analysis and worked for 3 to 10 years in this field. One judge had a Ph.D. and the other four had master's degrees in the field of Special Education. All of the judges had published at least one data based paper in applied behavior analysis.

Materials

A booklet (8 1/2" X 11") containing 44 graphs was presented to the participants. Each graph contained a baseline and intervention phase. Originally, 53 graphic figures were randomly selected from studies in the *Journal of Applied Behavior Analysis* between 1975 to 1985. When a figure was identified with multiple phases, a particular A-B phase sequence was picked from a random selection of all A-B sequences in the figure. Of the 53 graphs, nine were deleted for one or more of the following reasons:

1) no phase was indicated in the graph;
2) only one data point was within a single phase;
3) the distinction of phases (baseline and intervention) was not clear;
4) there was no baseline data.

Each particular A-B phase sequence was blown up to a 5" x 8" size on a single sheet. A booklet was then composed of the 44 graphs.

Procedure

Visual inspection. The experimenter (first author) individually met with each participant. After the participant read the instructions in the booklet of the 44 graphs, the experimenter asked if there were any questions. The instructions told the participants to score each graph on the answer sheet. The treatment effects for each graph were to be scored: "significant", "nonsignificant", or "unclear". The session took approximately 20 minutes to complete.

Randomization test. In order to apply the Edgington's randomization test (Edgington, 1980a, 1980b, 1980c), a graph has to contain at least 25 data points across the A and B phases. The criterion of 25 data points was derived in order to obtain a type I error of .05. As a result, only 15 out of the 44 graphs (34%) met the criterion and were tested for statistical significance. The ordinate scores of the 15 graphs in the booklet were estimated by the first author and a graduate assistant in special education. The point by point agreement was determined by dividing the smaller estimate by the larger estimate and multiplying by 100. The mean interobserver agreement for all of the points was 81% in all of the 15 graphs. The Edgington's randomization test (1980a, 1980b, 1980c) was then applied for comparing the adjacent phases in each of the graphs.

Results

Interjudge Agreement

The Friedman test (Marascuilo & McSweeney, 1977) was used to evaluate the disagreement among the judges when using visual inspection. A significant agreement among the five judges, (43)= 145.4, $p < .05$, was found. However, this agreement among the judges was not strong as measured by Kendall's coefficient of concordance. In particular, $W = .68$ with its average inter-rater reliability given by $r = .60$. For all practical purpose, this agreement is not large.

In addition, the percentage of agreement between all paired comparisons across judges' ratings was calculated across all 44 graphs. If they made the same rating, e.g., "unclear," an agreement was counted. There were 440 paired comparisons of ratings. Percentage agreement was calculated by dividing the number of agreements by the number of agreements and disagreements, and multiplying the quotient by 100. The mean percentage of agreement was 60%. This can be compared to a chance level of agreement of 50%. On this basis, it can be concluded that the agreement is just slightly better than chance.

Since agreement on the significance of phase differences was deemed critical, a second analysis using the same procedure was applied. Here, the data categories nonsignificant and unclear were collapsed into one category. Thus, there were two resulting categories: significant and nonsignificant. Here, the percentage of agreement improved to 74%. If the three choices have equal probability, then the level of agreement is given by 67% when the two categories are collapsed. Even here, the evidence (74%) does not support the assumption of strong agreement among judges.

Next, an evaluation was made of the proportion of times all five of the judges agreed on one of the three categories for each of the 44 graphs. This occurred only 27% of the time, indicative of poor agreement. The same evaluation was made for the case where four out of five judges agreed. This percentage was also low being only 29%. Thus, at least four of the five judges agreed on the ratings of a graph 56% of the time. For this four of five or five of five agreements, 36% of the set of graphs were judged significant, 9% nonsignificant, and 11% unclear. The frequency of the number of judges agreeing on each of the response categories is shown in Table 1.

Insert Table 1 about here

Finally, the average ratings by the judges were calculated across the 44 graphs. The proportion of the ratings were: significant= 48%, nonsignificant= 16%, unclear= 35%. Therefore, less than half of the adjacent phases in these published graphs were deemed visually significant even though they were judged by visual inspection editors and reviewers of the journal articles as significant.

Only 15 of the 44 graphs had at least 25 data points across the two phases and could be subjected to Edgington's randomization test. Of this number, only four (27%) were found to be significant.

To compare the results of the statistical test with visual inspection, a graph was considered significant from visual inspection when at least 80% of the judges ranked a particular graph as significant. Table 2 shows the number and proportion of significant and nonsignificant determinations with the two procedures. The two procedures led to agreement 80% of the time. It should be noted that the highest proportion of agreements

(67%) was on the nonsignificant cases. The remaining 13% was on the significant cases.

Insert Table 2 about here

Discussion

This study attempted to answer a number of questions about the reliability and significance of single case research. First, the present results support previous findings showing relatively weak agreement among judges when visually inspecting differences between adjacent AB phases. Depending upon the criterion, there was 56%-74% agreement, with judges differing significantly among each other in their judgments. Second, judges visually agreed that only 48% of the adjacent phases were significantly different from each other. This is particularly disconcerting since all of the graphs were selected from published articles that had been previously evaluated by a set of reviewers as significant. Third, of the sample of graphs analyzed by the randomization test, only 27% proved to be statistically significant. Caution must be taken when interpreting this finding because of the small subsample (*n*=15) used in the analysis. The behavioral community should be disturbed to find that a small percentage of the graphs (15 of 44) had enough data points to conduct a statistical analysis, and that, in general, behavior analytic researchers are not making use of statistical procedures (Haring, 1982; Park, 1986). Fourth, among the graphs undergoing statistical analysis, there was 80% agreement with the visual inspection of the five judges. While this agreement is considerable, the results must be qualified because most of the agreement (67%) was on its graphs nonsignificant by Edginton's test and rated as nonsignificant by its judges. Again there was a small subsample of graphs on which this decision is based. These findings are parallel to those of Jones et al.(1978) who found a 73% agreement between visual inspection and statistical analysis (time series analysis) for data with low autocorrelations. A separate analysis found the present data set to be high in autocoreelation (Marascuilo & Busk, 1987). It therefore appears that there is a high level, although not perfect, agreement between visual and statistical procedures when its graphs are rated by judges as non-significant whether the data are low or high in autocorrelation. In this study, 13 graphs were identified as non-significant by Edgington test or the judges and 10 of these were identified as non-significant by both methods. Even so, of greatest concern is the making of accurate judgments about the appearance of a significant effect. However, evidence for agreement on significant effects was not found in this study. Five graphs were identified as significant by either the Edginton test or the judges. Of these only two were significant by both methods.

There appears to be a growing data base which is establishing the unreliability of visual inspection (DeProspero &

Cohen, 1979; Jones, Weinrott, & Vaught, 1978; Knapp, 1983; Wampold & Furlong, 1981). An unexpected finding is that there is disagreement between the visual and statistical approaches with the latter often being a more conservative indicator. Baer (1977), it may be remembered, suggested that visual inspection would be a more conservative determinant of significance than statistical analysis. Yet, Jones et. al. (1977) and the present data report cases where visual inspection reported significance and statistical analysis indicated nonsignificance. Given the stability of visual inspection under a narrow set of parameters (DeProspero and Cohen, 1979), one could predict that future investigations would continue to report findings where the two methods would disagree. Even so, there is probably some point where rather large differences across treatment phases would produce consistent agreement between visual and statistical procedures (Cf., Knapp, 1983).

Given the limited reliability of visual inspection, and the more objective nature of statistical procedures, it would seem wise to follow the DeProspero and Cohen (1979) and Jones et. al. (1978) recommendation to use the two procedures jointly. That is, in a study both procedures would be applied and a conclusion of significance would only be made when there was joint agreement. Anything less than joint agreement would lead to the inference of nonsignificance. Interestingly, nearly a decade has passed since statistical analyses have been proposed as a supplement to, or replacement of, visual inspection in evaluating the reliability of behavior change in single subject data (DeProspero & Cohen, 1979; Kazdin, 1976, 1982) and there has been no move toward the adoption of statistical techniques among behavior researchers (Park, 1986).

It is possible, though, that the rejection of visual inspection as a singular judgmental device is premature. For one, almost all of the visual inspection studies have had judges contrast a pair of adjacent experimental phases. In practice, authors and reviewers inspect data sets with multiple: treatment phases, baselines, and participant replications. Judges must make an inference of significance or nonsignificance from these complex graphic displays. Up to now, statistical studies have only used techniques designed to determine significance between adjacent AB phases. It would be helpful to simultaneously evaluate multiple phases, base lines, and participants using the model of Marascuilo and Busk (1985) for determining significance for a data set. Until such studies are conducted, it may be premature to conclude that there is limited agreement between statistical and visual procedures.

Finally, it may be incorrect to delimit the utility of visual procedures or bind the conclusion of single case studies to statistical procedures on the grounds that behavior analysts make inferences of significance from a multiplicity of information sources. Although the graph may be the heart and ultimate arbiter when determining significance, an investigator considers setting, task, participant, and procedural variables when concluding significance. In fact, Sidman (1969) has pointed to the advantage of single case methodology in that it keeps the investigator close to the organism under study, thus enhancing the chances for insightful observations and conclusions. For instance, some of the participants in the study by DeProspero and Cohen (1979) refused to make judgments because they lacked this contextual information. They felt, perhaps correctly, that making visual judgement _in vacuo_ would violate single case methodology. In addition, the information required to confirm the effect of an intervention in a behavior analytic study has been augmented in recent years. In addition to visual inspection and experimental observation of procedures, participants, and outcomes, the criterion of social validity has been added to the requirement of study evidence. Social validity may entail comparison with the normative performance of a similar sample or the subjective judgement of participant improvement by a group of significant others. In either case, visual inspection-statistical studies have not addressed the social validity factors in the evaluation of treatment significance.

In spite of the need for more multifaceted research, future research clearly argues for the joint usage of visual inspection and statistical procedures. The joint agreement of significance should be obtained before making a conclusion about an intervention. Hopefully, a second-generation of reliability data will emerge from investigators who use visual and statistical procedures as part of their regular methodology.

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Table 1

Frequency of the Number of the Judges Agreeing on Each of the Response Categories.

	Categories			
Number of Agreements	S	NS	U	Total
0	-	-	-	-
2	6	2	8	16
3	4	2	11	17
4	6	4	3	13
5	10	-	2	12

S= significant
NS= non-significant
U= unclear

Table 2

Agreement between visual inspection and randomization test

		Visual Inspection	
		S	NS
Randomization Test	S	2 (13%)	2 (13%)
	NS	1 (7%)	10 (67%)

S= significant
NS= nonsignificant